DOCUMENT RESUME

ED 206 703 TM 810 605

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TITLE Sampling and Weighting Activities for Assessment Year 11. Final Report on National Assessment of Educational Progress.
INSTITUTION Research Triangle Inst., Research Triangle Park, N.C.
SPONS AGENCY Education Commission of the States, Denver, Colo. National Assessment of Educational Progress.: National Center for Education Statistics (ED), Washington, D.C.: National Inst. of Education (ED), Washington, D.C.
REPORT NO NAEP-11-SW-47; RTI-1967-00-02F
PUB DATE Jun 81
CONTRACT OEC-0-74-0506
GRANT NIE-G-80-0003
NOTE 236p.

EDRS PRICE MF01/PC10 Plus Postage.
DESCRIPTORS Computer Oriented Programs; *Educational Assessment; Elementary Secondary Education; *Methods; *National Competency Tests; *Sampling; Testing; Testing Programs
IDENTIFIERS *National Assessment of Educational Progress

ABSTRACT

Sampling activities for Year 11 of the National Assessment of Educational Progress began in 1977 when plans were begun to Years 11-14. In March 1979 the sample was selected and allocated. In-school secondary sample selection activities were carried out during May through August, 1979, and in-school package assignment and field support activities were begun in August and continued into 1980. Sample weight computation activities began in January and continued through August 1980. The Supplementary Frame secondary sample was selected in July and August 1979, and the third-stage sample of discontinuers and early graduates was selected during March through May 1980 and administered in June through August. Supplementary Frame weights were computed in September through November 1980. This report documents the Year 11 in-school sampling and weighting activities, and the Supplementary Frame activities. Primary type of information provided by the report: Procedures (Sampling) (Weighting). (Author/BW)

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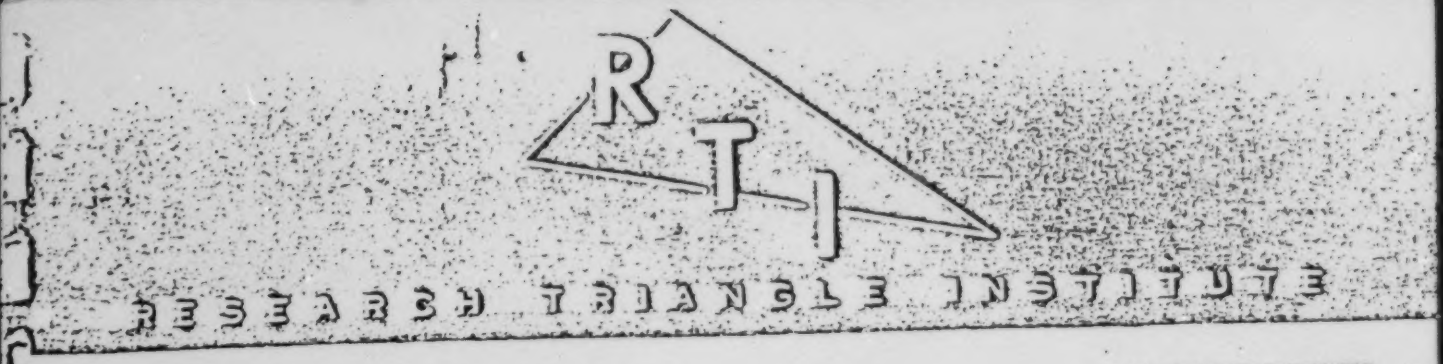


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RTI/1967/00-02F

# FINAL REPORT ON NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS SAMPLING AND WEIGHTING ACTIVITIES FOR ASSESSMENT YEAR 11

by

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TM 810 605

No. 11-SW-47

Prepared for
National Assessment of Educational Progress
June 1981



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The work upon which this publication is based was performed pursuant to Grant NIE-G-80-0003 of the National Institute of Education. It does not, however, necessarily reflect the views of that agency.

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# 1. INTRODUCTION

This report is submitted to the National Assessment of Educational Progress (NAEP) and constitutes the final report for assessment Year 11. The report covers in-school and supplementary frame sampling activities in the eleventh operational year of National Assessment. Out-of-school sampling activities for Young Adults were not carried out during Year 11 because of reduced funding.

## 1.1 Overall National Assessment Objectives

The long-term objective of the National Assessment of Educational Progress is to assess the progress of education of selected population groups. This objective has required the development and implementation of a continuing program of data collection, analysis, and reporting.

The immediate products of the National Assessment program are statistical data series describing the knowledge, skills, and attitudes of selected population groups. A stated objective of National Assessment has been to present educational outcome data which may be readily understood by the lay public as well as by professional researchers, educators, and legislators. This has brought about a departure from traditional educational measurement procedures which are directed toward individual performance on a battery of exercises. The National Assessment data are used to present estimates of population group performance on specific exercises. This shift in the method of data acquisition and presentation has required development of unique sample selection, data collection, and analysis procedures.

The National Assessment program has focused on major population subgroups and on specified subject matter areas. The special populations

targeted by National Assessment are restricted to four age classes (1,2,3, and 4): 9-year-olds, 13-year-olds, 17-year-olds, and young adults (26-35 years of age), respectively. Nine year-olds, 13-year-olds, and 17-year-olds are assessed in school. In addition, 17-year-olds no longer enrolled in school are assessed in their homes, as are young adults. The assessment of young adults was suspended in Year 06, and was resumed as a separate undertaking in Year 08 only. Additionally, the assessment of out-of-school 17-year-olds was suspended in Year 08, and not resumed until Year 11. Other population subgroups can be defined within each age class (e.g., region, sex, race, level of parents' education, and community type); these subgroups are discussed in some detail in section 1.3.

The subject matter areas assessed through Year 11 have included:

Year 01 - Science, Citizenship, and Writing;

Year 02 - Reading and Literature;

Year 03 - Music and Social Studies;

Year 04 - Mathematics and the reassessment of Science;

Year 05 - Career and Occupational Development and the reassessment of Writing;*

Year 06 - Art and the reassessment of Reading;

Year 07 - Basic Mathematics and the reassessment of Citizenship and Social Studies (combined);**

Year 08 - Reassessment of Science at all age classes; assessment of Health and Energy and reassessment of Reading at Age Class 4;

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*Year 05 out-of-school assessment included Career and Occupational Development only.

**In Year 07, Basic Mathematics exercises were administered to 13- and 17-year-olds only.

Year 09 - Reassessment of Mathematics at all in-school age classes;

Year 10 - Reassessment of Music, Art, and Writing;

Year 11 - Reassessment of Reading, Literature, and Art*.

In Years 05 and 06, supplemental Mini-Assessments of Functional Literacy (MAFL) were also conducted for 17-year-olds. In Year 06, Index of Basic Skills packages were additionally administered to 17-year-olds; in Year 08, Basic Life Skills packages were administered to 17-year-olds; in Year 09, 17-year-olds were assessed in Consumer Skills; and in Year 10, Attitudes and Achievement in Mathematics packages were additionally administered to 13-year-olds and twelfth graders.

1.2 Historical Overview of National Assessment

National Assessment has undergone a mild evolution over the period of its brief history. Special adjustments in sampling and field procedures have been made every year to accommodate the special requirements of exercise administration in new subject matter areas. The sampling of 17-year-olds not enrolled in school shifted from a household sample approach to a multiple frame approach to a school dropout and early graduate frame approach over the first five years of assessment.

In Year 01, 17-year-olds not enrolled in school were located in the household sample only. The sample of out-of-school 17-year-olds is called the Supplementary Frame sample. Several potential methods of obtaining lists of out-of-school 17-year-olds were investigated before the Year 05 procedure was finalized. Some of these potential lists included an area household frame, secondary school records, colleges, military service induction centers, Neighborhood Youth Corps, Job Corps, and the Employment Security Commission. In Year 05, the decision was made to obtain early

*In Year 11, Art exercises were administered to 13-year-olds only.

graduate and dropout lists from a subsample of the schools selected for 17-year-old assessment. The examinations of these potential lists are documented elsewhere [1], [2].

A number of modified field procedures were initiated in the Year 02 out-of-school assessment as a result of the Year 01 experience. The requirement of including all States in the in-school sample necessitated major sample design changes in Year 02; further sample design modifications were instituted in Year 05 to meet this requirement and also provide simple, relatively unbiased methods of estimating sampling error.

In Year 04, a study to align National Assessment sample stratification more closely with NAEP reporting categories was undertaken. Some valuable by-products of this study included (1) the definition of Census low-income areas as a stratification tool to isolate the low metropolitan subpopulation, (2) the use of Census estimates of the percent rural 17-year-olds to define the extreme rural subpopulations, and (3) the development of a standardized set of procedures, including computer software, to classify respondents into size and type of community reporting categories.

The Year 06 assessment included a number of experimental studies of alternate methods of administration, which had an impact on how field procedures were conducted as part of the 17-year-old assessment. One study explored the operational feasibility of a modified student selection procedure. As a result of this substudy, it was decided to modify the student selection procedure in Year 07 from a systematic sample to a simple random sample. Additionally, the simple random sampling approach allowed schools to use pre-existing lists of eligibles (i.e., computer printouts, classroom rosters) to the fullest extent. A second feasibility study conducted in Year 06, involving a subsample of 48 schools, tested three different package

administration plans designed to increase the number of respondents without the use of alternates. This study was carried out as a statistically valid experimental design so the response rates and cost factors could be compared and any observed difference could be evaluated against the experimental error. As a result of this substudy, a procedure to followup nonrespondents on the day after package administration was adopted in Year 07.

A number of more formal self-evaluation projects have been conducted. These projects included sample efficiency studies, a quality check resurvey of the household sample in Year 01, and a followup study of nonresponding in-school 17-year-olds in Year 04. Beginning in Year 04, the quality of the collected data has been assessed through annual probability samples of schools.* Following the Years 06, 07, and 08 assessments, NAEP and RTI held a District Supervisors debriefing conference to obtain recommendations for future National Assessment years. Meetings of this type supply valuable insight to planning subsequent assessments.

Additionally, in Year 06 RTI participated with NAEP in developing a coordinated four-year school sampling design which achieved broad dispersion of the sample over the four-year period, yet avoided many of the problems encountered in the past when the same schools were selected in successive years through independent annual samples. The proposed design also reduced the number of travel points in any single year's sample. This change was motivated by the reduced funding level and associated reduction in package administration loads anticipated for subsequent assessments. Cost and variance analyses indicated that such a reduction in primary sampling points would improve design efficiency. Reducing the number of travel

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*Because of cost considerations, a nonprobability sample of schools was examined in Year 05.

points became a viable option as a result of the relaxation of the all-state representation requirement in Year 07.

Two design modifications were adopted in Year 07. First, a multistage reallocation procedure based on the school frame data was adopted. The procedure reassigned the 162 replicates in Year 07 to PSUs proportional to revised 17-year-old size measures based on estimated 17-year-old school enrollments developed from the school frame.

Secondly, in Year 07 a ranking of schools based on parents' occupation and DOC classification was made prior to package assignment. This ranking was used to identify the oversampled substratum within each PSU. The group package sample size for each oversampled and nonoversampled school within each substratum was then determined from age class enrollment estimates on Principal's Questionnaires and from previously computed student response rates by size and type of community. This procedure allowed adjustments to be made for schools which, at sample selection, may have been misclassified into the oversampled substratum.

Three additional design modifications were incorporated in Year 08. First, the 17-year-old student samples were selected in a PSU at the same time that the 9-year-old student samples were selected. Nine- and seventeen-year-old respondents were assessed at the usual time; however, the new procedure eliminated some of the school burden by giving 17-year-old schools more time to prepare for assessment.

Secondly, student sample weights were equalized separately within the oversampled substratum and within the remainder at the student selection level by varying the sample size. Group sample sizes ranged from 10 to 35.

Thirdly, the Year 08 Quality Check sample was selected across all three age classes. Previously only schools at a particular age class had

been included in the quality check sample each year. This new procedure enabled RTI's National Assessment Administration Center to detect more rapidly any irregularities in the collection of National Assessment data. As a result of recommendation from the District Supervisor's debriefing conference, the maximum group sample size in Year 09 was reduced from 35 to 25 students. Similarly, the minimum was increased from 10 to 16. Expected sample weight sums and sample sizes for various maxima and minima were examined prior to the decision. It was found that the maximum group size could be reduced without appreciably altering the targeted sample size while still equalizing the sample weights.

In Year 10, the method of estimating the number of eligibles per school was refined. Previously, eligibles were estimated using the school grade by grade enrollment and 1970 estimates of the proportion of eligibles per grade in each State. Using the Year 09 response data and Principal's Questionnaire data, regression equations were developed in Year 10 to predict estimated eligibles by school for each age class.

In Year 11, a coordinated four-year primary sample was selected. The sample was selected in March 1979 and was preceeded by an 18-month planning effort. During the planning period, primary designs from the first ten years were examined in terms of strengths and weaknesses, design efficiency studies conducted in Year 07 were re-examined, and the direction of the sample over the next four years was discussed. The sampling procedures are documented elsewhere [3].

## 1.3 Subpopulation Representation

National Assessment reports results for a variety of subpopulations. Besides the three in-school age groups, reported subpopulations include within each age level four geographic regions, sex, race, grade, four

levels of parents' education, and seven size and type of community (STOC) categories. These reporting groups are listed in table 1-1.

The geographic regions referred to in table 1-1 are those used by the Office of Business Economics, Department of Commerce. Table 1-2 defines NAEP's regions in terms of the sets of States which comprise the four geographic areas.

The size and type of community categorization mentioned in table 1-1 refers to a postclassification of schools in terms of the residential distribution and parental occupation of attending students. A detailed description of the STOC classification procedures is presented in section 2.6.

A major objective of the National Assessment survey design is to guarantee adequate sample representation for the reporting subpopulations listed in table 1-1. Such representation is essential if reasonably precise comparisons among these subpopulations are to be made within a given assessment year and with previous years when the same subject areas were assessed.

1.4 Overview of Sampling Activities

Sampling activities for Year 11 began in 1977 when plans were begun for the selection of a coordinated four-year primary sample to be allocated to Years 11-14. In March 1979 the sample was selected and allocated. In-school secondary sample selection activities were carried out during May through August, 1979, and in-school package assignment and field support activities were begun in August and continued into 1980. Sample weight computation activities began in January and continued through August 1980. The Supplementary Frame secondary sample was selected in July and August 1979, and the third-stage sample of discontinuers and early graduates was selected during March through May 1980 and administered in June through

Table 1-1. National Assessment reporting categories

| Classification | Number of subgroups | Subgroup names |
|---|---|---|
| Age level | 3 | 9-, 13-, 17-year-olds |
| Sex | 2 | Male, Female |
| Race | 4 | White, Black, Hispanic, Other |
| Geographic region | 4 | Northeast, Southeast, Central, West |
| Level of parental education | 4 | No high school<br>Some high school<br>Graduate high school<br>Post high school |
| Size and type of community (STOC) | 7 | Low metropolitan (extreme inner city)<br>High metropolitan (extreme affluent suburb)<br>Extreme rural<br>Main big city (remainder of big city)<br>Urban fringe (suburban fringe)<br>Medium city<br>Small places (small city) |
| Grade | 3 (9's, 13's) | 3,4, Other<br>7,8, Other |
| | 4 (17's) | 10,11,12, Other |

Table 1-2. Definitions of National Assessment regional subpopulations

| Northeast | Southeast |
|---|---|
| Delaware | Arkansas |
| Connecticut | Florida |
| Maine | Virginia |
| New Hampshire | West Virginia |
| Rhode Island | Alabama |
| Vermont | Georgia |
| District of Columbia | Kentucky |
| Maryland | Louisiana |
| Massachusetts | Mississippi |
| New Jersey | North Carolina |
| Pennsylvania | South Carolina |
| New York | Tennessee |
| **Central** | **West** |
| Iowa | Alaska |
| Kansas | Hawaii |
| Nebraska | Idaho |
| North Dakota | Montana |
| South Dakota | Nevada |
| Minnesota | Wyoming |
| Missouri | Arizona |
| Illinois | Oregon |
| Indiana | Utah |
| Michigan | Colorado |
| Wisconsin | New Mexico |
| Ohio | Oklahoma |
| | California |
| | Texas |
| | Washington |

August. Supplementary Frame weights were computed in September through November 1980.

1.5 Report Organization

Chapter 2 of this report documents the Year 11 in-school sampling and weighting activities. Supplementary Frame activities are described in Chapter 3. A list of references is included at the end of each chapter.

## REFERENCES FOR CHAPTER 1

[1] Moore, R. P. and B. L. Jones. Study of Alternative Sampling Frames for Out-of-School 17-Year-Olds. RTI Project 25U-688-1. Technical Report No. 1, December 1971.

[2] Moore, R. P. and B. L. Jones. Multiple Frame Sampling for Out-of-School Seventeen Year-Olds in Year 03 of National Assessment. RTI Project 25U-796-3, Technical Report No. 1, February 1973.

[3] Chromy, James R., B. L. Jones, and Anne F. Clemmer. Year 11 Primary Sample for the National Assessment of Educational Progress. RTI project 25U-1764. Final Report, June 1980.

# 2. IN-SCHOOL ASSESSMENT

## 2.1 Introduction

The subject areas assessed in Year 11 were Reading, Literature, and Art. Reading and Literature had been previously assessed in Year 02, and Reading had been reassessed in Year 06. Art had been assessed in Year 06 and reassessed in Year 10. Year 11 Art exercises were administered to 13-year-olds only. Table 2-1 summarizes the number of Year 11 packages by age class and type of package. Planned sample sizes by age class are shown in table 2-2.

### 2.1.1 Target Population

The target population specified for in-school assessment included 9-year-olds, 13-year-olds, and 17-year-olds enrolled in either public or private schools at the time of assessment. Table 2-3 presents the specific age definitions prescribed for assessment Year 11 and the range of age for eligibles in the school sample.

The target populations defined by birthdate ranges in table 2-3 were restricted by excluding persons who were functionally handicapped to the extent that they could not participate in the assessment as it was normally conducted. Specific groups excluded were:

(1) Non-English speaking persons;

(2) Respondents identified as nonreaders during the assessment;

(3) Persons physically or mentally handicapped, including Educable Mentally Retarded (EMR), in such a way that they could not respond to NAEP exercises as they were normally administered;

(4) Students attending public and private schools established for the physically handicapped and/or mentally retarded.

In addition to these groups which were judged incapable of responding properly, 9- and 13-year-olds not enrolled in public or private schools at

Table 2-1. Year 11 in-school NAEP packages by age class and type of package

| Age class | Reading and Literature | Reading, Literature, and Art |
|---|---|---|
| 1 (9-year-olds) | 11 | - |
| 2 (13-year-olds) | 14 | 1 |
| 3 (17-year-olds) | 14 | - |

Table 2-2. Planned sample sizes by age class

| Age class | Number of packages | Sample size/ package | Total sample size |
|---|---|---|---|
| 1 (9-year-olds) | 11 | 2,592 | 28,512 |
| 2 (13-year-olds) | 15 | 2,592 | 38,880 |
| 3 (17-year-olds) | 14 | 2,592 | 36,288 |

Table 2-3. Definitions of target populations and range of age for eligibles

| Age group | Survey period | Eligible birthdates |
|---|---|---|
| 9-year-olds | 1/02/80 to 3/02/80 | Calendar year 1970 |
| 13-year-olds | 10/09/79 to 12/15/79 | Calendar year 1966 |
| 17-year-olds | 3/05/80 to 5/04/80 | 10/01/62 to 9/30/63 |

| | Eligible age range | | |
|---|---|---|---|
| | Minimum | Mid-range | Maximum |
| 9-year-olds | 9 yrs. 1 mo. | 9 yrs. 7½ mos. | 10 yrs. 2 mos. |
| 13-year-olds | 12 yrs. 9½ mos. | 13 yrs. 4½ mos. | 13 yrs. 11½ mos. |
| 17-year-olds | 16 yrs. 6 mos. | 17 yrs. ½ mo. | 17 yrs. 7 mos. |

the time of assessment were excluded. Out-of-school 9- and 13-year-olds represent such a small fraction of their respective age groups that it was not worthwhile to pursue them. Other general NAEP sample design specifications are mentioned in the following paragraphs.

2.1.2 Sample Design Objectives

The following were the major objectives of the four-year sample design implemented beginning in Year 11:

(1) Insure that at least one PSU was present in each region by size of community category annually.

(2) Reduce the geographic size of PSUs.

(3) Redefine sampling size of community stratification to more closely align with reporting size and type of community definitions.

(4) Oversample low income and extreme rural areas to insure adequate sample representation for the reporting subpopulations.

(5) Insure that a school would appear in the sample no more than once every four years.

(6) Facilitate simple and relatively unbiased estimates of sample variance.

(7) Permit samples of either (a) 75 PSUs with 550 schools at each age level or (b) 100 PSUs with 1000 schools at each age level.

## 2.2 Primary Sample

To achieve the major objectives stated in section 2.1.2, a four-year primary sample was designed and implemented. The primary sample selection was completed in March 1979 and documented in a separate final report to ECS [1].

Counties and 1970 Census-recognized county-equivalent independent cities, or clusters of these, comprised the primary sampling frame. Twenty major strata were defined by crossing the four geographic regions with five sampling description of community (SDOC) levels. The five SDOC categories are defined as follows:

| SDOC | Definition |
|---|---|
| 1 | SMSA counties containing all or part of a central city of 200,000 or more population ("big city") in 1970. |
| 2 | Remaining counties in "big city" SMSA's. |
| 3 | Other counties containing all or part of a place with 25,000 or more population in 1970. |
| 4 | Counties not qualifying for SDOC 1, 2, or 3 and not classified as "extreme rural" (SDOC 5). |
| 5 | Counties not classified as SDOC 1, 2, or 3, not having 10,000 or more total 1970 urban population, having non-zero farm employment, and having relatively high values of an "extreme rural" index, computed based on county labor force occupational classifications. |

The allocation of a one year sample of 162 replicates in proportion to a measure of size for each region by SDOC stratum is shown in table 2-4. The size measures shown is the average number of 9-, 13-, and 17-year-olds, counting children in inner cities and extreme rural areas twice.

Within each region by SDOC stratum, the desired integer sample allocation was configured into an allocation of 1-, 2-, and 3-replicate sample units, as shown by table 2-5. For example, in region 1 and SDOC 1, the thirteen allocated replicates were partitioned into five 2-replicate units and one 3-replicate unit ($5 \times 2 + 1 \times 3 = 13$).

Before implementing sample selection, frame units were ordered within each of the major strata in serpentine fashion by state and alternatingly within states by increasing and then decreasing value of percent racial minorities.

From the described stratified, ordered sampling frame, five equal size samples were selected utilizing a probability minimum replacement (PMR) algorithm, which allows exact probability proportional to size selection

Table 2-4. Sample allocation by region and SDOC categories

| Region | SDOC | Size measure | Single-sample allocation | Integer single sample allocation | Five-sample allocation |
|---|---|---|---|---|---|
| 1 | 1 | 337,519 | 12.67 | 13 | 65 |
| | 2 | 231,294 | 8.68 | 9 | 45 |
| | 3 | 321,465 | 12.07 | 12 | 60 |
| | 4 | 127,115 | 4.77 | 5 | 25 |
| | 5 | 20,769 | 0.78 | 1 | 5 |
| | | 1,038,162 | 38.97 | 40 | 200 |
| 2 | 1 | 171,171 | 6.42 | 6 | 30 |
| | 2 | 90,011 | 3.38 | 3 | 15 |
| | 3 | 272,331 | 10.22 | 10 | 50 |
| | 4 | 312,766 | 11.74 | 12 | 60 |
| | 5 | 127,759 | 4.80 | 5 | 25 |
| | | 974,038 | 36.56 | 36 | 180 |
| 3 | 1 | 382,934 | 14.37 | 14 | 70 |
| | 2 | 186,151 | 6.99 | 7 | 35 |
| | 3 | 268,679 | 10.08 | 10 | 50 |
| | 4 | 188,897 | 7.09 | 7 | 35 |
| | 5 | 211,410 | 7.94 | 8 | 40 |
| | | 1,238,071 | 46.47 | 46 | 230 |
| 4 | 1 | 496,084 | 18.62 | 19 | 95 |
| | 2 | 78,696 | 2.95 | 3 | 15 |
| | 3 | 268,835 | 10.09 | 10 | 50 |
| | 4 | 138,779 | 5.21 | 5 | 25 |
| | 5 | 83,343 | 3.13 | 3 | 15 |
| | | 1,065,737 | 40.00 | 40 | 200 |
| TOTAL | | 4,315,008 | 162.00 | 162 | 810 |

Table 2-5. Allocation in terms of 1-, 2-, and 3-replicate units

| Region | SDOC | Single-sample allocation | | | | Five-sample allocation | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total reps | 1-rep | 2-rep | 3-rep | Total reps | 1-rep | 2-rep | 3-r |
| 1 | 1 | 13 | - | 5 | 1 | 65 | - | 25 | 5 |
| | 2 | 9 | - | 3 | 1 | 45 | - | 15 | 5 |
| | 3 | 12 | - | 6 | - | 60 | - | 30 | - |
| | 6 | 5 | 1 | 2 | - | 25 | 5 | 10 | - |
| | 7 | 1 | 1/2 | - | - | 5 | 5 | - | - |
| | | 40 | | 16 | 2 | 200 | 10 | 80 | 1 |
| 2 | 1 | 6 | - | 3 | - | 30 | - | 15 | - |
| | 2 | 3 | 1 | 1 | - | 15 | 5 | 5 | - |
| | 3 | 10 | - | 5 | - | 50 | - | 25 | - |
| | 4 | 12 | - | 6 | - | 60 | - | 30 | - |
| | 5 | 5 | 1/2 | 2 | - | 25 | 5 | 10 | - |
| | | 36 | | 17 | - | 180 | 10 | 85 | - |
| 3 | 1 | 14 | - | 7 | - | 70 | - | 35 | - |
| | 2 | 7 | - | 2 | 1 | 35 | - | 10 | 5 |
| | 3 | 10 | - | 5 | - | 50 | - | 25 | - |
| | 4 | 7 | 1 | 3 | - | 35 | 5 | 15 | - |
| | 5 | 8 | - | 4 | - | 40 | - | 20 | - |
| | | 46 | 1 | 21 | 1 | 230 | 5 | 105 | 5 |
| 4 | 1 | 19 | - | 8 | 1 | 95 | - | 40 | 5 |
| | 2 | 3 | 1 | 1 | - | 15 | 5 | 5 | - |
| | 3 | 10 | - | 5 | - | 50 | - | 25 | - |
| | 4 | 5 | 1 | 2 | - | 25 | 5 | 10 | - |
| | 5 | 3 | 1/3 | 1/17 | - | 15 | 5/15 | 5/85 | - |
| | | 40 | | | 1 | 200 | | | 5 |
| TOTAL | | 162 | 8 | 71 | 4 | 810 | 40 | 355 | 20 |

of a fixed number of units from a frame with units of unequal size. Four of the samples were randomly assigned to the assessment years 11 through 14. The primary sample utilized for Year 11 of National Assessment is listed in Appendix F. The fifth sample was reserved to serve as a source of replacements for refusing primary units and a possible supplemental sample under a large sample option.

The procedure used for selecting the five equal sized primary samples did not preclude the possibility that some frame units might be selected more than once. Further, the method of assignment of multiple selections to the five samples (years) did not ensure balance by year, thus a sample PSU could be assigned twice to one year and not at all in another. The primary sample was examined to determine how many times this situation occurred. Three occurrences were identified across the entire five-part sample and revisions were made to balance the sample by year in these instances. Only one of the adjustments affected the Year 11 primary sample.

None of the PSUs selected for the special augmentation/replacement sample were required for PSU replacement in Year 11.

## 2.3 Secondary Frame Construction and Selection of Sample Schools

### 2.3.1 School Frame Construction

For all Year 11 primary sampling units, all public and private schools were enumerated. The grade range, total enrollment, and certain identifying data were obtained for each school. A computer tape containing the desired data was obtained from Curriculum Information Center (CIC). CIC is a Denver-based organization that gathers information pertaining to public and private schools in the United States. Using the grade range and total enrollment data, an estimate of the number of age class eligibles in each school was made.

2.3.1.1 Validation of Completeness of School Frame.

As noted in the preceding section, an estimate of the number of age class eligibles for each school was obtained using the grade range and total enrollment data. An estimate of the number of age class eligibles in each PSU was obtained by summing these estimates across schools. The estimate of the 17-year-olds obtained by this method was compared with an estimate of the 17-year-old population used at the primary level of sample selection. If the two estimates of eligible 17-year-olds differed considerably and/or the relations among the three age class totals were determined atypical, the following further checks were made. Estimates of age class eligibles and primary sampling frame totals for PSUs selected from the same State in the previous year's assessment were examined to see if similar discrepancies occurred. If necessary, it was verified that estimates appeared for each eligible school in each PSU and that correct data and methods were utilized in estimating the age class eligibles for each school.

2.3.1.2 Validation of Completeness of School Frame for Oversampled Populations

If a primary unit contained a population to be oversampled, estimates were computed of: (a) the total age class eligibles in the oversampled population and (b) the percent of age class eligibles in the oversampled population.

If the primary unit contained schools classified as low metropolitan and the estimated percent of age class eligibles in these schools was judged too large or too small, the classification of these schools was reexamined. Schools were reclassified from low metropolitan to nonlow metropolitan status in accordance with prescribed directives. These reclassification procedures are detailed elsewhere [9].

If the primary unit contained an extreme rural population, it was verified that the estimated percent rural population was properly recorded for each county in the PSU.

2.3.2 Selection of Sample Schools

To achieve simple, unbiased variance estimation, the school frame in self-representing PSUs was stratified into two- and three-replicate areas containing populations of similar types. For example, in a particular self-representing unit, one two-replicate area might consist of low metropolitan and remainder of the city schools; the second area containing only schools from outside the city limits could account for another two replicates. To simplify estimation of the within PSU variance contribution from self-representing SMSAs, schools were selected to provide two or three nonoverlapping one-replicate subsamples which would easily accommodate the paired selection variance scheme. Schools in selected PSUs were chosen to accommodate the number of packages specified in table 2-6. Table 2-6 lists the anticipated maximum number of packages to be administered in Years 11 through 14. For those primary units selected for 2 or 3 years, the schools necessary for the total maximum allocation for one year were determined and doubled or tripled as required. The numbers of selected schools were quadrupled to accommodate the four year period. Since the number of packages specified for Year 11 assessment was not the same as table 2-6, it was necessary to subsample the Year 11 schools to conform to the Year 11 package configuration.

2.3.2.1 Oversampling Low Metropolitan and Extreme Rural Schools

School strata were defined in terms of 1970 Census data to oversample the low metropolitan type of community. Low metropolitan schools were

Table 2-6. Anticipated maximum number of packages to be administered in Years 11 through 14

| Age | Number of group packages | Number of individual packages |
|---|---|---|
| 9-year-olds | 13 | 1 |
| 13-year-olds | 15 | 0 |
| 17-year-olds | 18 | 0 |

those schools located in the Census Employment Survey (CES) low income areas. CES low income areas were defined in section 2.1. Low metropolitan schools were oversampled at a rate of approximately two-to-one in relation to nonextreme schools.

Extreme rural schools were defined as schools located in nonSMSA counties where the extreme rural indices computed from occupational statistics were above specified values. Oversampling of extreme rural schools was accomplished at the primary sampling stage.

2.3.2.2 Stratification and Selection of Sample Schools

Within each oversampled and nonoversampled stratum, schools were further stratified by estimated number of eligibles. Within each size stratum, schools with a small number of age class eligibles were clustered in groups of two or three schools until the cluster of schools could collectively take the number of packages assigned to larger schools in the stratum. The schools were clustered such that the total number of age class eligibles in each cluster was approximately equal. The probability with which each school in the cluster was selected was

$$P(\text{School}|\text{PSU}) = \frac{n \sum_{i=1}^{k} S_i}{S} ,$$

where

$n$ = total number of schools to be selected from the stratum;

$k$ = total number of schools in the cluster;

$S_i$ = number of age class eligibles in school-i;

$S$ = total number of age class eligibles in the stratum.

Schools or school clusters were selected without replacement using Sampford's probability proportional to size and without replacement sampling technique.

## 2.4 Package Assignment and Field Operations

### 2.4.1 Package Assignment

#### 2.4.1.1 Introduction

The National Assessment of Educational Progress (NAEP) in-school sample was selected in several stages. The selection procedures for first-stage sampling units (counties or multi-county areas) and for second-stage sampling units (schools) were documented in sections 2.2 and 2.3. The selection procedures for third-stage sampling units are documented in this section. Since a probability sample of students is required for each NAEP package, the sampling process involved three steps within each school:

(1) Selection of a probability student sample;

(2) Partitioning of the student sample into subsamples;

(3) Random assignment of NAEP packages to the student subsamples.

In Year 11, the total assignment across all age classes consisted of 40 unique group packages. This compares to total assignments of 35 group packages in Year 09 and 41 group packages in Year 10. All Year 11 packages contained some combination of Reading and Literature exercises. There also were seven Art exercises in one Year 11 Age Class 2 package. At each age class, three Year 11 packages were made up of exercises recycled from Years 02 and 06; all other Year 11 packages were made up of exercises which had not been administered in previous years. Table 2-7 shows the distribution of Year 11 packages by composition (either new or recycled exercises) and by age class.

Student selection and package assignment procedures require a current updating of student enrollment, grade range, and related information for all sample schools. This requisite information is obtained by the District

Table 2-7. Number of Year 11 packages by age class and composition

| Age Class | Number of Packages | | |
|---|---|---|---|
| | All Recycled Exercises | All New Exercises | Total Packages |
| 1 | 3 | 8 | 11 |
| 2 | 3 | 12 | 15 |
| 3 | 3 | 11 | 14 |
| Total | 9 | 31 | 40 |

Supervisors (DSs) during introductory meetings with superintendents, principals, and/or their representatives. During these introductory meetings, new schools in selected districts and sample schools with grade range changes are reported to the District Supervisor. This information is relayed to the Research Triangle Institute (RTI) Sampling Research and Design Center (SRDC). Using probability procedures, new schools are admitted to the sample and sample schools with grade range changes are readmitted to the sample.

Student selection and package assignment instructions are then prepared on a flow basis and coordinated with the field operation. Table 2-8 shows excerpts from the Year 11 schedule for in-school administration and sampling. In order to eliminate some of the assessment burden on 17-year-old schools, the 17-year-old student samples were selected in a PSU at the same time that 9-year-old assessment was conducted. This procedure allowed 17-year-old schools more time to prepare for assessment. As a result of this change, it was necessary to process 9- and 17-year-old package assignments simultaneously in December and January as noted in table 2-8. Included in the Age Class 3 package assignments were additional instructions to supplement the student sample with students who might have entered school since the Age Class 3 student sample was selected.

A new procedure of checking in packages using District Supervisor identification numbers rather than PSU based package identification numbers was initiated in Year 09 and continued in Years 10 and 11. This procedure is explained in section 2.4.1.2. Procedures to update the school sample are documented in section 2.4.1.3. Section 2.4.1.4 documents the method by which the number of eligible students in each school is estimated and how the Principal's Questionnaire data are used to restratify each school by

type of community (TOC). The actual allocation and assignment of packages to schools is documented in section 2.4.1.5.

To initiate the package assignment procedure for a given PSU, certain data pretaining to that PSU must be collected and transmitted to the RTI sampling staff. These data are collected on specific forms, which include the PSU Control Sheet and the Principal's Questionnaire. Copies of these forms are included as appendixes D and A, respectively. Additionally, a completed set of computer prepared package assignment forms is included as appendix E.

2.4.1.2 Package Identification Numbers

Within each primary sampling unit (PSU), each group package was administered one, two or three times; therefore, either one, two or three hardshells containing 18 to 24 copies of each group package were distributed in each PSU. Unique ranges of package identification numbers were assigned to package copies within each hardshell. The package identification numbers were used to link the respondent to the package administered within each school; however, the particular packages to which an individual responded can be detected only from records which never leave the school.

In Year 11, each District Supervisor was assigned a package identification number range based on the number of package administrations in primary sampling units under his supervision. Table 2-9 lists the Year 11 District Supervisor package identification ranges by age class. Preassigning the ranges enabled Westinghouse DataScore Systems to preprint the package identification numbers. Previous to Year 09, District Supervisors had manually coded the package identification numbers on each package. The new procedure provided more time for the District Supervisors to perform other tasks such as monitor sessions, review exercise administrators' work, etc.

Package identification numbers were unique within a school and linked respondents to packages within a school. Again, the forms linking the respondents to the particular package administration never left the school.

Table 2-8. Schedule for Year 11 package assignment and related field activities

| Period | Activity |
|---|---|
| August 27 - October 5, 1979 | Age Class 1 and 2 introductory meetings. |
| September 17 - November 9, 1979 | Package assignment for Age Class 2 schools provided. |
| October 8 - December 14, 1979 | Age Class 2 assessment. |
| November 26 - December 28, 1979 | Package assignments for Age Class 1 and 3 schools provided. |
| January 7 - February 29, 1980 | (a) Age Class 1 assessment.<br>(b) Select Age Class 3 sample. |
| March 3 - May 2, 1980 | Age Class 3 assessment. |

Table 2-9. Year 11 District Supervisor package identification ranges

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2.4.1.3 School Sample Adjustments

2.4.1.3.1 Updating Sample for New Information

In Year 11, sample schools were selected on the basis of the most recent information available. However, when selected districts and schools were contacted by the District Supervisor, new schools may have been found. In addition, sample schools were sometimes found to have closed or to have changed grade ranges such that the schools no longer contained eligibles for the particular age classes for which they were selected. These changes were reported to the RTI sampling staff and the file of schools was updated to reflect the current information.

New schools which were reported to the RTI sampling staff were admitted to the Year 11 sample on a probability basis. The sampling procedures by which this task was accomplished are documented elsewhere [4].

Procedures were also followed to properly handle schools that became eligible for a new target age group sample due to grade range change.

In Year 11 an additional three schools were selected into the sample as a result of these updating procedures. Table 2-10 lists the number of new schools that were added to the sampling frame and the number of these schools which were selected. The same information is also given for sample schools with grade range changes.

2.4.1.3.2 Sample Adjustments for School Nonparticipation

2.4.1.3.2.1 Reasons for Nonparticipation

Nonparticipating schools may be classified into these three main categories:

(1) Closed schools;

(2) Schools lacking age class eligibles;

(3) Refusals.

Table 2-10. Year 11 new schools and sample schools with grade range changes admitted to the sample on a probability basis

| Region | New Schools* | | Schools with grade range change | |
|---|---|---|---|---|
| | Added to sampling frame | Selected | Added to sampling frame | Selected |
| Northeast | 3 | 1 | 4 | 0 |
| Southeast | 10 | 1 | 2 | 0 |
| Central | 4 | 1 | 2 | 0 |
| West | 15 | 0 | 2 | 0 |
| Total: | 32 | 3 | 10 | 0 |

*A school was counted for every age class for which it was added to the sampling frame.

Table 2-11 summarizes school nonparticipation in Year 11 of National Assessment by age class. Approximately 13 percent of the selected schools did not participate in assessment. Percentages in each nonparticipation category are also shown in table 2-11 for the overall sample.

2.4.1.3.2.2 Selection of Additional Schools as a Result of Original Sample School Refusals

In Years 01 through 06, approximately 1,000 schools were selected per age class. In an effort to keep travel costs to a minimum, the Year 07 through 11 school samples were designed so that approximately 500 schools were selected per age class. As a result, the Year 07 through 11 schools were assigned more packages per school than in previous years. Since the number of Year 11 sample schools was considerably reduced, school refusals were especially critical. In many cases, the refusal of a school resulted in not enough schools remaining in the PSU to take the allocated packages and maintain group sample sizes of 16. As schools refused, the remaining schools in the PSU were examined. If not enough schools remained to maintain group sample sizes of 16, then replacement schools were selected. A total of 51 replacement schools were selected. These schools are listed by age class and region in table 2-12.

2.4.1.4 Use of the Principal's Questionnaire Data

Data from the Principal's Questionnaire for selected and participating school were used for a number of different purposes. Some of these purposes included estimation of the number of age class eligibles in each school; determination of the number of split or modular sessions for each school; and estimation of the type of community (TOC), derived size of community (DOC), and size and type of community (STOC) indices for each sample school. A detailed explanation as to how the Principal's

Table 2-12. Summary of Year 11 sample school nonparticipation

| | Age Class 1 | Age Class 2 | Age Class 3 | Total Sample No. | Total Sample Percent |
|---|---|---|---|---|---|
| Total Schools Selected[1/] | 608 | 642 | 490 | 1,740 | 100.0 |
| Assessment Conducted | 560 | 534 | 412 | 1,506 | 86.6 |
| Assessment Not Conducted | 48 | 108 | 78 | 234 | 13.4 |
| Refused | 32 | 41 | 46 | 119 | 6.8 |
| Closed | 6 | 10 | 2 | 18 | 1.0 |
| No Eligibles Enrolled | 10 | 54 | 28 | 92 | 5.3 |
| Other[2/] | 0 | 3 | 2 | 5 | 0.3 |

[1/] Includes new schools selected via sample updating and replacement schools.

[2/] Schools found to be outside the selected PSU and dropped from the sample.

Table 2-[illegible]12. Numbers of Year 11 replacement schools

| Region | Age Class 1 | Age Class 2 | Age Class 3 | Total |
|---|---|---|---|---|
| Northeast | [illegible]1 | 6 | 6 | 13 |
| Southeast | [illegible]1 | 4 | 2 | 7 |
| Central | 0 | 3 | 2 | 5 |
| West | [illegible]3 | 4 | 9 | 26 |
| Total | [illegible]5 | 17 | 19 | 51 |

Questionnaire was used for each of the preceding purposes is provided in section 2.6 and elsewhere [4].

2.4.1.4.1 Estimation of Number of Age Class Eligibles in each School

In Years 01 through 09 the grade-by-grade enrollment on the Principal's Questionnaire along with 1970 Census estimates of proportions of age class eligibles by state were used to estimate the age class eligibles in each school. In Years 07 through 09, the targeted per package sample sizes of 2600 were slightly underachieved. It was felt that this underachievement was in part due to an overestimation of age class eligibles in sample schools. Part of the overestimation may have been caused by using 1970 Census estimates to estimate 1978 and 1979 populations. Unfortunately the Census Bureau does not update these estimates between censuses.

In Year 10, because of this underestimation, a decision was made to change the method of estimating age class eligibles per school, and the new procedure was also followed in Year 11. Year 09 response data and Principal's Questionnaire data were used to develop regression equations to predict estimated eligibles in Year 11 by school separately for each age class. Independent variables included region, size of community, percent Black, and percent Hispanic. The dependent variable was proportion respondents by grade. A separate prediction equation was developed for the proportion respondents in each grade associated with the age class (i.e., grades 6 through 9 for 13-year-olds). The prediction equations were then combined to produce the total estimate of age class eligibles. The regression equations for each age class are listed in table 2-13.

2.4.1.4.2 Computing the Number of Students Available for Assessment in Each School

In certain large schools, the District Supervisor is allowed to complete Student Listing Forms (SLFs) for a subsample of the eligible

students rather than all. SLFs are forms on which all eligible students for a particular sample school are listed. Whether subsampling of the student list in the sample school is allowed is noted on the PSU Control Sheet by a digit other than one (1) appearing in column 9 of the form. The number appearing in column 9 is the count interval to be used in the subsampling process. Column 8 lists the start number for the subsampling process. The procedure by which the entries in column 8 and 9 are computed are documented elsewhere [4].

2.4.1.4.3 Restratifying Sample Schools Based on the TOC Index.

Within each PSU, sample schools were ranked on the basis of their TOC index from most extreme to least extreme type of community. The TOC index for each school is computed from data supplied on the Principal's Questionnaire. The procedure to compute the TOC index is documented in section 2.6.2. The derived size of community (DOC) was input to the package assignment computer software. The DOC index is a means of classifying schools as to size of place and location with respect to urbanized areas of large cities. Using the DOC index and the TOC index, schools were ranked from most extreme to least extreme type of community.

For each school, the expanded enrollment was computed as the estimated number of age class eligibles divided by the selection probability for the school given the PSU. The expanded enrollment was summed over all schools to obtain a quantity called the total expanded school enrollment for the PSU. In addition, two quantities which were computed at the time the secondary sample was selected were utilized in the restratification process. These quantities were:

A = the fraction of the age class eligibles located in the oversampled region of the PSU;

Table 2-13. Prediction equations to determine number of age class eligibles in sample schools

$$T_{9i} = E_{2,9i}S_{2,9i} + .2093E_{3,9i}H_{3,9i}R_{3,9i}S_{3,9i} + .4997E_{4,9i}H_{4,9i}R_{4,98}S_{4,9i}B_{4,9i} + E_{5,9i}S_{5,9i}$$

$$T_{13i} = E_{6,13i}S_{6,13i} + .3115E_{7,13i}R_{7,13i}S_{7,13i}B_{7,13i} + .6206E_{8,13i}R_{8,13i}S_{8,13i}B_{8,13i} + E_{9,13i}S_{9,13i}$$

$$T_{17i} = E_{9,17i}S_{9,17i} + .1872E_{10,17i}R_{10,17i}S_{10,17i}B_{10,17i} + E_{11,17i}B_{11,17i} + .0827E_{12,17i}R_{12,17i}S_{12,178}$$

where

$T_{ji}$ = estimated j-year-olds in school-i;

$E_{kji}$ = grade-k enrollment from Principal's Questionnaire for estimated j-year-olds in school-i;

$H_{kji}$ = grade-k regression coefficient associated with Principal's Questionnaire percent Hispanic indicator variables for estimating j-year-olds in school-i;

| Percent Hispanic indicator variable | $H_{3,9i}$ | $H_{4,9i}$ |
|---|---|---|
| 1, if school-i percent Hispanic on PQ $\leq$ 25%; | 1.2597 | 1.0786 |
| 0, otherwise. | | |
| 1, if school-i percent Hispanic on PQ > 25%; | 1.0000 | 1.0000 |
| 0, otherwise. | | |

Table 2-13. Prediction equations to determine number of age class eligibles in sample schools (continued)

$R_{kji}$ = grade-k regression coefficient associated with region indicator variable for estimating j-year-olds in school-i;

| Region indicator variable | $R_{3,9i}$ | $R_{4,9i}$ | $R_{7,13i}$ | $R_{8,13i}$ | $R_{10,17i}$ | $R_{12,17i}$ |
|---|---|---|---|---|---|---|
| 1, if school-i in Northeast Region; | 0.6588 | 1.1309 | 0.6875 | 1.2328 | 0.7766 | 1.5433 |
| 0, otherwise. | | | | | | |
| 1, if school-i in Southeast Region; | 0.8174 | 1.0639 | 0.7627 | 1.1069 | 0.6114 | 1.1116 |
| 0, otherwise. | | | | | | |
| 1, if school-i in Central Region; | 1.0471 | 0.9791 | 1.0430 | 1.1013 | 0.6876 | 0.6760 |
| 0, otherwise. | | | | | | |
| 1, if school-i in West Region; | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0, otherwise. | | | | | | |

$S_{kji}$ = grade-k regression coefficient associated with size of community (SOC) indicator variable for estimating j-year-olds in school-i;

| SOC indicator variable | $S_{2,9i}$ | $S_{3,9i}$ | $S_{4,9i}$ | $S_{5,9i}$ | $S_{6,13i}$ | $S_{7,13i}$ |
|---|---|---|---|---|---|---|
| 1, if school-i in | 0.0110 | 0.8005 | 1.116 | 0.0137 | 0.0227 | 0.7840 |
| 0, otherwise. | | | | | | |
| 1, if school-i in SOC 2; | 0.0059 | 0.7669 | 1.1077 | 0.0059 | 0.0300 | 0.9482 |
| 0, otherwise. | | | | | | |

Table 2-13. Prediction equations to determine number of age class eligibles in sample schools (continued)

| SOC indicator variable | $S_{2,9i}$ | $S_{3,9i}$ | $S_{4,9i}$ | $S_{5,9i}$ | $S_{6,13i}$ | $S_{7,13i}$ |
|---|---|---|---|---|---|---|
| 1, if school-i in SOC 3; | 0.0071 | 1.0088 | 1.0514 | 0.0050 | 0.0193 | 1.0512 |
| 0, otherwise. | | | | | | |
| 1, if school-i in SOC 4; | 0.0070 | 1.1729 | 0.9954 | 0.0028 | 0.0210 | 1.2352 |
| 0, otherwise. | | | | | | |
| 1, if school-i in SOC 5; | 0.0162 | 1.0000 | 1.0000 | 0.0043 | 0.0291 | 1.0000 |
| 0, otherwise. | | | | | | |

| SOC indicator variable | $S_{8,13i}$ | $S_{9,13i}$ | $S_{9,17i}$ | $S_{10,17i}$ | $S_{12,17i}$ |
|---|---|---|---|---|---|
| 1, if school-i in SOC 1; | 0.9949 | 0.0136 | 0.0246 | 0.7062 | 1.3561 |
| 0, otherwise. | | | | | |
| 1, if school-i in SOC 2; | 1.1145 | 0.0080 | 0.0171 | 0.6848 | 1.0137 |
| 0, otherwise. | | | | | |
| 1, if school-i in SOC 3; | 0.9901 | 0.0042 | 0.0072 | 0.9373 | 0.8831 |
| 0, otherwise. | | | | | |
| 1, if school-i in SOC 4; | 0.9704 | 0.0059 | 0.0109 | 0.2324 | 0.8395 |
| 0, otherwise. | | | | | |
| 1, if school-i in SOC 5; | 1.0000 | 0.0010 | 0.0220 | 1.0000 | 1.0000 |
| 0, otherwise. | | | | | |

Table 2-13. Prediction equations to determine number of age class eligibles in sample schools (continued)

$B_{kji}$ = grade-k regression coefficient associated with Principal's Questionnaire percent Black indicator variable for estimating j-year-olds in school-i;

| Percent Black indicator variable | $B_{4,9i}$ | $B_{7,13i}$ | $B_{8,13i}$ | $B_{10,17i}$ | $B_{11,17i}$ |
|---|---|---|---|---|---|
| 1, if school-i % Black on PQ is 0 to 24%; | 1.1443 | 0.7963 | 1.1074 | 0.7541 | 0.6960 |
| 0, otherwise. | | | | | |
| 1, if school-i % Black PQ is 25 to 49%; | 1.0729 | 0.9382 | 0.8883 | 1.1933 | 0.5574 |
| 0, otherwise. | | | | | |
| 1, if school-i % Black on PQ is 50 to 74%; | 0.8860 | 1.2928 | 0.7949 | 1.7700 | 0.5631 |
| 0, otherwise. | | | | | |
| 1, if school-i % Black on PQ is 75 to 100%; | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.5833 |
| 0, otherwise. | | | | | |

B = the fraction of the age class eligibles located in the nonoversampled region of the PSU;

= 1 - A.

An oversampled poststratum was formed by summing the expanded enrollment for each school down the list of ranked schools, until this sum exceeded A times the total expanded school enrollment for the PSU. The oversampled poststratum then consisted of all schools included in this sum. The remaining schools were placed in the nonoversampled poststratum. A fraction of the total number of group packages for the replicate and the age class was then allocated to the oversampled poststratum. This fraction was $\frac{2A}{2A + B}$ where A and B were defined earlier. The remainder of the packages were allocated to the nonoversampled poststratum.

It should be noted that when A, the fraction of the age class eligibles located in the oversampled region of the PSU, equals one (1.0000), then B equals zero (0.0000), and all schools are placed in the oversampled poststratum. Furthermore, all packages are allocated to the oversampled poststratum. When A equals zero (0.0000), then B equals one (1.0000) and all schools are placed in the nonoversampled poststratum. All packages for the replicate and the age class are then allocated to the nonoversampled poststratum.

2.4.1.5 Package Allocation

2.4.1.5.1 Standby Schools

Schools having fewer than the designated number of eligible respondents for the administration of a group package were specified as standby schools. Each standby school received at most one group administered package from the planned number of group administered packages for the PSU. Many standby schools received only some portions of a group administered

package. The determination as to whether a standby school was to receive 16 copies of the package to be administered or a fraction of this number was made to be consistent with the weights for other packages in the PSU.

All standby schools from each PSU were placed together as a separate part of the nonoversampled poststratum (or oversampled poststratum if a nonoversampled poststratum was not defined for the PSU). Oversampled and nonoversampled poststrata have been previously defined in section 2.4.1.4.2. The standby schools as a group were allocated packages from the total packages allotted to the nonoversampled poststratum in proportion to the aggregate expanded enrollment for all standby schools. The package allocation for the standby schools as a group was then apportioned among the individual standby schools in proportion to their expanded enrollment. When it was necessary to apportion the 16 copies of the package among several standby schools, each school's proportionate share of the copies was computed in terms of expanded enrollment.

2.4.1.5.2 Checking the Feasibility of the Tentative Package Allocation

For nonstandby schools within each poststratum, the tentative package allocation was compared with the maximum number of packages which that school could absorb. When a package allocation for a given school was determined to require more eligibles than were present in the school, the package allocation for the school was reduced to the maximum that school could take, and the remaining packages were proportionately allocated among the remaining schools. The procedure by which these remaining packages were allocated is detailed elsewhere [4].

2.4.1.5.3 Assigning Packages to Schools. Once the package allocation was determined for each school in the PSU, the actual package numbers were

assigned from a random permutation of the digits 1 through $k_i$, where $k_i$ was the number of distinct group packages for age class-i. The group package numbers were assigned to the TOC-ordered sample schools from the random permutation according to the number of group packages assigned to each school. The random permutation was used once and then repeated in a two-replicate PSU; it was used once and repeated twice in a three-replicate PSU.

Finally, the package assignment for each school in a PSU was printed by the computer. A package assignment summary form was also printed. An example of the school package assignment form and the package assignment summary form are included in appendix E.

2.4.1.5.4 Student Selection Procedures.

A simple random sampling procedure was used to select sample students. The Student Listing Form (SLF) was an 8½" by 11" form listing up to 25 students per form. The listed students were numbered consecutively and sample students were selected using a random number table provided on the package assignment form (see appendix E). The student selection procedure is documented elsewhere [5] [6].

In Year 11, the group session sample size per school varied from 16 to 25. The sample size was varied in order to control sample size by type of community (i.e., different types of communities yield different response rates). Group session sizes were also varied for the related purpose of equalizing student weights separately within the oversampled and nonover-sampled strata.

The group sample size for each school was computed. Let Z be an estimate of the target population. The group package sample size for school-i was then computed as

$$S_i = \frac{f\ G\ R_i}{P_i\ g_i M} \qquad (2.1)$$

where

$f$ = $\frac{2,592}{Z}$ for nonoversampled substratum;

= $\frac{5,184}{Z}$ for oversampled substratum;

$G$ = the number of group administrations for one replicate (i.e., for 9-year-olds, G = 11; for 13-year-olds, G = 15; and for 17-year-olds, G = 14;

$R_i$ = the number of age class eligibles for school-i;

$P_i$ = P(PSU) x P(School-i | PSU);

$g_i$ = the number of group administrations assigned to school-i;

$M$ = response rate by SOC as computed from table 2-14.

In Year 11, the group sizes in equation 2.1 were updated prior to student selection when the true age class enrollments, say $N_i$, had been ascertained. Knowing the Principal's Questionnaire enrollment estimates $R_i$, the package sample size $S_i$ as computed from equation 2.1 permitted the updated estimate to be made as

$$n_i = S_i\ (N_i/R_i) \quad ,$$

with rounding to the nearest integer. Upper and lower bounds for the $n_i$ were set to avoid adding additional group administrations on one end and falling short of the targeted size on the other. The upper and lower bounds were set at 25 and 16, respectively. A table was provided on the package assignment form which gave the adjusted group session size associated with specified ranges of $N_i$. (See appendix E.)

As noted earlier, an additional package assignment form was prepared for 17-year-old assessment (see appendix E). This form allowed students who had entered school after the 17-year-old sample had been selected and

Table 2.14. Expected student response rate by size of community (SOC)

| SOC | 9-year-olds | 13-year-olds | 17-year-olds |
|---|---|---|---|
| 1 | .8239 | .8127 | .6255 |
| 2 | .8687 | .8354 | .6094 |
| 3 | .8878 | .8404 | .7007 |
| 4 | .9019 | .8820 | .7406 |
| 5 | .8884 | .8756 | .7713 |

before assessment had been conducted a chance to enter the sample. The 17-year-old student samples were selected during the 9-year-old assessment to allow 17-year-old schools more time to prepare for assessment. The additional students were sampled at the same rate the original samples were selected. A table was prepared for the package assignment form applying this sampling rate to additional numbers of eligibles up to 30. Additional tables of random numbers were supplied on the form. Once the number of additional eligibles to be selected was determined from the table, the eligibles were selected by numbering the list of additional eligibles and applying the supplementary table of random numbers. The package ordering which appeared on the original package assignment form was reversed on the supplementary form and used to assign the additional selected eligibles to packages. Packages are usually administered following the administration order. Reversing this order allowed the school more time to contact additional students selected through the updating process.

2.4.1.5.5 Assessment Completion Rates.

The target sample size for each package was 2,592 respondents. The actual sample sizes per package in Year 11 are recorded in table 2-21. For 9-year-olds, the actual sample sizes varied from 1 to 5 percent above the target. For 13-year-olds, the actual sample sizes varied from 5 to 12 percent above the target. For 17-year-olds, the actual sample sizes varied from 3 percent below the target to 2 percent above.

2.4.2 Field Operations

2.4.2.1 Support of Field Operations

Field support activities are designed to assist the field staff to collect quality data. Field support activities for Year 11 were as follows:

First, RTI's sampling staff wrote letters, made visits, and/or made phone calls to selected school, district, and State officials to obtain their cooperation on an as-needed basis as requests for assistance were received from the field operations staff. When ambiguities arose, it was also the RTI sampling staff's responsibility to determine, by checking secondary frame listings, precisely which school buildings were selected into the sample.

Second, the RTI sampling staff altered package assignments as required, because of a school refusal or a shortage in number of eligible students in a given school. Notice of such changes were transmitted to National Assessment, the Scoring Contractor, the District Supervisor (DS), and the field staff. The RTI sampling and survey operations staffs cooperated to resolve discrepancies or missing information on Principal's Questionnaires or PSU Control Sheets received from the field. Such discrepancies were resolved by mail or telephone. Copies of Principal's Questionniares and PSU Control Sheets can be found in appendixes A and D, respectively.

Third, many sample schools, particularly those in Age Class 3, were found to contain modular sessions or several separate sessions. These sessions were termed split sessions, and each session was entered on the computerized file of schools.

Fourth, machine readable files were updated throughout the year to reflect changes in school personnel, in school enrollment, in grade range, in school participation status, and in district personnel. These updates were generally made before the package assignment was determined for each PSU and each age class.

Fifth, lists of selected schools, package identification numbers, and PSU Control Sheets were carefully proofed before delivery to RTI's NAAC staff for distribution in the field.

Sixth, the editing, coding, keypunching, and checking of all school worksheet data for all three age classes were a part of the field support activities. Production of sample completion reports by PSU, region, and District Supervisor for each age class was a further field support activity. The school worksheet data were the input data for these reports. School worksheet data were also used to compute the weights for each age class.

Lastly, it was often necessary for the sampling staff to consult with NAEP, DataScore, or RTI's NAAC staff and to prepare position papers and working papers and to participate in occasional special projects as a result of such consultations. These activities, too, were a part of the general field support activities.

2.4.2.2 Quality Check Activities.

In Year 11, a probability sample of 40 schools was selected for a quality check. Schools were selected from all three age classes to continuously monitor the activities of the field staff. The purpose of the quality check was to ascertain the quality of the National Assessment data being collected by RTI and its subcontractor, Westinghouse DataScore Systems. More specifically, quality check activities were conducted to determine:

(1) The accuracy of field staff transfer of student identifying data from the Student Listing Forms (SLFs) to completed packages;

(2) The extent to which prescribed procedures had been employed in administering packages;

(3) The extent to which SLFs had been completed for all eligible students enrolled in sample schools prior to sample selection.

The quality check sample was designed to provide:

(1) At least one school per age class for each District Supervisor;

(2) A ratio estimate of the completeness of the student sampling frame across all age classes.

(3) An estimate of the variance of the ratio estimate in item 2. above.

A final report summarizing Year 11 quality check activities was prepared and delivered to National Assessment in October 1980 [7].

2.5 Weight Computation

School and package weights adjusted for nonresponse for each age class were computed. School weights are appropriate for weighting background data collected from all students in a school. Package weights along with student response data provide ratio estimates of the population members who respond in alternative ways to National Assessment exercises. School and package weights were computed as the reciprocals of appropriate selection probabilties. The weights are computed using formulas and nonresponse adjustments previously approved by National Assessment staff.

Following the assessment of each age class, a tape containing student sample sizes by package was received from Westinghouse DataScore Systems. Student sample sizes recorded from the School Worksheets were reconciled.

Tapes containing the sample weights for each age class were mailed to DataScore where the weights were merged with the response data. Copies of the merged data tape were sent to National Assessment for analysis purposes and to RTI for efficiency studies.

At the same time that the respective weight tape for each age class was mailed to DataScore, intermediate documentation was mailed to NAEP for review. The intermediate documentation included weight sums, weight distributions by magnitude of weight, and explanations for atypically small and large weights.

Package and school weights are discussed in greater detail in the sections which follow. The formulas used to compute package and school weights are reviewed in sections 2.5.1 through 2.5.4. The weight computation software is documented in section 2.5.5. In section 2.5.6, the resultant weights are summarized and compared with known population totals for an assessment of the accuracy of the sample.

2.5.1 Regular Assessment Package Weights and Nonresponse Adjustments.

Weights for 9-, 13-, and 17-year-olds assessed in the regular in-school assessment were computed for Year 11 following procedures similar to those employed in previous years.

$W_{\alpha ij}$, the weights for package-$\alpha$ administered in school-i to student-j, is defined as the inverse of $P_{\alpha ij}$, the probability that student-j in school-i is selected to take package-$\alpha$, multiplied by appropriate adjustments for student, school, and PSU nonresponse. The weights can be expressed as

$$W_{\alpha ij} = \frac{A_i}{P_{\alpha ij}} \quad \frac{n_{\alpha i}}{n'_{\alpha i}} ,$$

where

$W_{\alpha ij}$ = the weight for package-$\alpha$ administered to student j of school-i;

$P_{\alpha ij}$ = the probability of selecting student-j of school-i for package-$\alpha$;

$n_{\alpha i}$ = the number of students selected for school-i for package-$\alpha$;

$n'_{\alpha i}$ = the number of respondents to package-$\alpha$ from school-i;

$A_i$ = the combined adjustment factor for school and PSU nonresponse.

$P_{\alpha ij}$ is computed in one of two ways depending on whether school-i is a standby or nonstandby school. In the following discussion,

$P_i \equiv$ the probability that school-i is in the sample = P(PSU) x P(school-i|PSU);

$n_{\alpha i} \equiv$ the planned student sample size for package-$\alpha$ in school-i;

$R_i \equiv$ the number of eligible students in school-i;

$G_i \equiv$ the number of group packages assigned to school-i;

$N \equiv$ total number of administrations per replicate for Age Classes 1, 2, and 3 and were 11, 15, and 14, respectively.

If school-i is a standby school, then

$$P_{\alpha ij} = P_i \frac{1}{N} \frac{\text{Min } [n_{\alpha i}, R_i]}{R_i} ,$$

where $P_i$ is the probability that school-i was in the sample; $\frac{1}{N}$ is the probability that group standby package-$\alpha$ was assigned to school-i; and Min $[n_{\alpha i}, R_i]/R_i$ is the probability that a particular student in school-i was selected to complete assessment package-$\alpha$. The quantity Min$[n_{\alpha i}, R_i]$ refers to the minimum of the planned sample size for package-$\alpha$ in school-i or the number of eligible students in school-i.

If school-i is a nonstandby school, then

$$P_{\alpha ij} = \frac{n_{\alpha i} G_i P_i}{N R_i} .$$

2.5.2 Regular Assessment School Weights and Nonresponse Adjustments

School weights for 9-year-olds, 13-year-olds, and regular assessment 17-year-olds were computed for Year 11 following previously defined procedures. School weights are appropriate for weighting data collected from all students assessed, such as Background Questionnaire data. These school weights can be expressed as

$$S_i = \frac{A_i}{P_i} \frac{R_i}{m_i} ,$$

where

$A_i$ = the combined adjustment factor for school and PSU nonresponse;

$P_i$ = the probability of selecting school-i = P(PSU) x P(school-i|PSU);

$R_i$ = the number of eligible students in school-i;

$m_i$ = the number of respondents in school-i.

The value $m_i$ was computed as

$$m_i = \sum_{\alpha \varepsilon i}^{G_i} n'_{\alpha i} ,$$

where $G_i$ is the number of group packages assigned to school-i and $n'_{\alpha i}$ is the number of respondents to package-$\alpha$ from school-i.

The combined adjustment factor, $A_i$, for school and PSU nonresponse was calculated as

$$A_i = \frac{\sum_i \frac{R_i}{P_i}}{\sum I_i \frac{R_i}{P_i}} \quad \text{and} \quad I_i = \begin{cases} 1 \text{ if } m_i > 0, \\ 0 \text{ otherwise.} \end{cases}$$

In computing, the subscript-i indexes all sample schools in the PSU. These formulas and specific nonresponse adjustment procedures are detailed in a working paper [2].

2.5.3. Followup Assessment Package Weights and Nonresponse Adjustments

A nonrespondent followup assessment of Year 11 Age Class 3 was conducted in March and April of 1980. Basically, the followup procedures consisted of returning to all 17-year-old sample schools achieving less

than a 75 percent student response rate on a day following regular assessment. One or two packages for each Class 3 school had been designated as followup packages using probability sampling procedures. When the District Supervisor returned to the school, he administered the designated packages to all selected students who were located and had not been previously assessed.

Development of weighting methodology for followup respondents is documented elsewhere [3]; this section formulates the weighting procedures associated with the Year 11 in-school nonrespondent followup assessment of 17-year-old students.

For initial respondents (students who participated without followup contact) in followup schools, package weights were computed as

$$\frac{A_i}{P_{\alpha ij}} F_{\alpha i(c)} = W^I_{\alpha ij} F_{\alpha i(c)} ,$$

where $F_{\alpha i(c)}$ is a weighting class nonresponse adjustment factor described later in this section.

The weight formulation which follows is applicable only to respondents who did not initially participate in followup schools. Since there were 14 distinct group packages administered to 17-year-olds, the weight for followup package-$\alpha$ administered in school-i to student-j is

$$\frac{A_i}{P_i} \frac{14}{G^F_i} \frac{R_i}{K_i} \frac{R^F_i}{n^F_{\alpha i}} F_{\alpha i(ci)} = W^F_{\alpha ij} F_{\alpha i(c)} ,$$

where

$P_i$ = the probability of selecting school-i = P(PSU) x P(school-i|PSU);

$K_i$ = the total number of students selected for group package administration in school-i, namely,

$$K_i = \sum_{\alpha \varepsilon i}^{G_i} n_{\alpha i} \ ;$$

$G_i$ = the number of regular packages assigned to school-i;

$G_i^F$ = the number of followup packages assigned to school-i;

$R_i$ = the number of eligible students in school-i;

$n_{\alpha i}^F$ = the number of followup students assigned to package-$\alpha$ in school-i;

$R_i^F$ = the number of eligible followup students in school-i.

The value $R_i^F$ may be computed as

$$R_i^F = \sum^{G_i} (n_{\alpha i} - n'_{\alpha i}) \ .$$

Weighting class nonresponse adjustments are based on computing the ratio of the sum of weights for all sample students to the sum of weights for respondents within a category or class. Weighting class adjustments are the form of nonresponse adjustment used for Year 11 weights in followup schools. A weighting class-c was defined for each package-$\alpha$ as

$$F_{\alpha i(c)} = \frac{\sum_{i \varepsilon c} W^I_{\alpha ij} \ n_{\alpha i}}{\sum W^I_{\alpha ij} \ n'_{\alpha i} + \sum W^F_{\alpha ij} \ n'^F_{\alpha i}} \ ,$$

where $n'^F_{\alpha i}$ is the number of followup respondents to package-$\alpha$ in school-i. To control the number of students who might attend a followup session, the number of followup students selected for package-$\alpha$ in school-i ($n^F_{\alpha i}$) was at most 40. The numbers $n^F_{\alpha i}$ and $n'^F_{\alpha i}$ were obtained by dividing the actual numbers of followup students selected and assessed by the sampling fraction required to subsample to 40.

The weighting class-c for package-$\alpha$ was defined as all followup schools where package-$\alpha$ was administered. Subsets of this total set were also

considered based on region, size of community, and region by size of community. All subsets were rejected because no subset contained at least 2 schools where followup was planned to be conducted.

2.5.4 Followup Assessment School Weights

2.5.4.1 Initial School Weights

Initial school weights were formed by removing the number of respondents from the regular school weight and substituting the number of students selected, i.e.,

$$S_i^I = S_i \frac{m_i}{K_i} .$$

The value $K_i$ is the number of students selected from school-i and is computed as

$$K_i = \sum_{\alpha \varepsilon i}^{G_i} n_{\alpha i} ,$$

where $n_{\alpha i}$ is the number of students selected from school-i for package-$\alpha$. The comparable nonresponse adjustment is

$$\frac{K_i}{m_i + m_i^F} ,$$

where $m_i^F$ is the number of followup respondents in school-i; $m_i^F$ is the sum of $n_{\alpha i}^{'F}$ over all followup packages; and $n_{\alpha i}^{'F}$ was previously obtained by dividing the actual number of followup students assessed by the sampling interval required to subsample to 40. The nonresponse adjustment is applied to the initial school weight to obtain

$$S_i^{IA} = S_i \frac{m_i}{K_i} \frac{K_i}{m_i + m_i^F} = S_i \frac{m_i}{m_i + m_i^F} .$$

2.5.4.2 Followup School Weights

The followup school weight can be expressed as

$$S_i^F = \frac{A_i}{P_i}\,\frac{R_i}{K_i}\,\frac{R_i^F}{R_i^F} = \frac{A_i}{P_i}\,\frac{R_i}{K_i} = S_i\,\frac{m_i}{K_i} = S_i^I ,$$

where $R_i^F$ = the number of eligible followup students in school-i. Thus, the nonresponse adjusted followup school weight is

$$S_i^{FA} = \frac{A_i}{P_i}\,\frac{R_i}{K_i}\,\frac{K_i}{m_i + m_i^F} = \frac{A_i}{P_i}\,\frac{R_i}{m_i + m_i^F} = S_i\,\frac{m_i}{m_i + m_i^F} = S_i^{IA} .$$

2.5.5 Documentation of Weight Computer Software.

Package weights and school weights were calculated for each school that participated in National Assessment. Extensive editing of the input data preceded the weight calculations. Data obtained at the time of PSU definition and selection were brought together with data collected throughout the assessment year to produce the weight files; the sources of data ranged from school principals to Census files. The large volume of data processed during an assessment year required that efficiency and ease of use be prime considerations in file construction and data handling procedures. The calculation of weights and the production of the weight tape were the final steps in the process.

2.5.5.1 Master File Structure and Content.

The master file contains data for all schools and districts selected for Year 11. There is a single record for every unique school and district record for every unique district in the sample. The master file is basically a name and address file; however, some additional information is contained on the school records for each age class in which the school is to participate.

Machine readable tables were prepared describing the variables on the school and district records, the positions of the variables on the records, and the length of each variable. The tables are used as input to subroutines which read and update the data in the master file as requested.

A district or random access method of procedding the master file is used; therefore, directories containing pointers to the various records are required. The directory of PSUs has pointers to the various PSU directories, and the directory for a single PSU has pointers to the data records for the schools and districts in the PSU.

2.5.5.2 Data Preparation

In preparation for the computation of weights, data must be drawn together from several different sources. The data sources are elaborated in the sections which follow. Data were collected from the field and generated in machine readable form at RTI throughout the assessment year. When the assessment for each age class was completed, data were sent to RTI from DataScore for reconciliation.

2.5.5.2.1 Principal's Questionnaire, Package Assignment, and School Worksheet Data Files

Principal's Questionnaire data were collected from the school principals for every participating school and recorded on a disk file as input to the package assignment and weight programs. The data were edited for consistency, and validity checks were performed where appropriate. An example of the Principal's Questionnaire is included as appendix A.

A record was generated by the package assignment program for every participating school. This record contained the package numbers which were to be administered in the school at the time of assessment. Upon completion of assessment in a school, the District Supervisor filled in and

returned to RTI a copy of the School Worksheet; an example of the School Worksheet is included as appendix B. The data entered were as follows:

(A) Package numbers for packages administered;

(B) Planned and actual package sample size;

(C) Total number of eligible students in the school;

(D) Number of students identified by the school as non-English speaking, emotionally or mentally retarded, or functionally disabled;

(E) Number of nonreaders;

(F) Number of Student Listing Forms (SLF).

A disk file was created containing the information extracted from the School Worksheet. The allocation of packages indicated on the School Worksheet file was compared with the assignment generated by the package assignment program; inconsistencies were resolved. Consistency checks were also performed on the number of sample students.

2.5.5.2.2 Data From DataScore.

Data tapes containing the sample size recorded by DataScore were received at RTI. The 13-, 9-, and 17-year-old tapes were received on February 26, April 7, and June 23, 1980, respectively. DataScore's data tapes were compared with RTI's School Worksheet data files for consistency; discrepancies were corrected as appropriate.

2.5.5.2.3 Nonresponse Adjustments for Lost Packages.

When a package was assigned to a school in which age class eligibles were present but no packages were administered, the package was considered lost. An adjustment for the lost package was made to the package weight for that package in another school where the package was administered. The adjustment was made to the appropriate package weight in another school in

the same PSU or to a school in another PSU. Specific computational procedures for making these nonresponse adjustments are documented elsewhere [2].

2.5.5.2.3.1 Input.

Input required for the computation of nonresponse adjustments for lost packages included the master file, the tables and directories needed for processing the master file, the package assignment data, the School Worksheet data, and a table of PSU selection probabilities.

2.5.5.2.3.2 Output.

The output from the computation of the nonresponse adjustments was a file of variable length records containing the PSU number, the package number, and the adjustment for each package where appropriate. In addition, a table was printed listing component parts for each adjustment factor.

2.5.5.3 Weight Computations.

A package weight was computed for all packages which were administered; a school weight was computed if a school had at least one respondent. Calculation of the weights took place after all basic editing of the input data had been completed; in addition, a final edit was performed at the time the weights were calculated.

2.5.5.3.1 Input.

The computation of weights required: (1) Principal's Questionnaire data, (2) package assignment data, (3) School Worksheet data, (4) the master file along with its associated tables and directories, (5) PSU selection probabilities, and (6) nonresponse adjustments when necessary.

2.5.5.3.2 Output.

The primary output of the weight computation procedure was the preliminary weight file containing one record for each package administered. A

summary of the weight calculations and selected data items for a school were printed by PSU. In addition, any errors that were detected in the data were indicated in a printout. Also, a list of refusal schools was printed so that a final check could be made as to whether appropriate nonresponse adjustments had been made.

2.5.5.4 Weight Distributions

Once the preliminary weight file had been generated containing a package and school weight for each record, a subfile of school weights was produced containing one record for each school in which a package was administered. Each of these files was used as input to the weight distribution program.

2.5.5.4.1 Purpose

The ordered listing of weights by package provided a means of easily spotting large and small weights. Statistics such as sample size, mean, standard deviation, etc., were computed for each package.

2.5.5.4.2 Procedure

The file was sorted by package and magnitude of weight before it was used as input to the weight distribution program. Sums of weights and numbers of respondents were calculated for use in computing the required statistics. A printout by package was produced with the following items listed for each school: (1) PSU number, (2) school number, (3) number of respondents, (4) package weights, and (5) indication of standby status. Statistics and a frequency distribution were printed for each package.

2.5.5.5 Final Weight File

At this point the remaining updates to data on the weight record were made. Errors detected during the calculation of the weights and generation of the preliminary weight file as well as errors detected in the weight

distributions were corrected. Once these changes had been made the resulting file constituted the final weight file.

2.5.5.6 Data Distribution

RTI maintains two copies on tape of the package assignment file, the Principal's Questionnaire file, the School Worksheet file, and the final weight file. In addition, a tape of the final weight file for each age class was mailed to DataScore. DataScore then merged the weight and response data tapes. A copy of the final merged tape was mailed to National Assessment staff. Weight tapes for 13-, 9-, and 17-year-olds were mailed to DataScore on April 9, April 29, and August 15, 1980, respectively. The format for the Year 11 weight tape is included as appendix C.

2.5.6 Weight Computation Results

Tables 2-15 through 2-19 summarize the sample sizes for the packages at each age class. They also list the sum of the weights for each package, the average weight, the standard deviation, and the minimum and maximum weight for each package. Seventeen-year-old summaries are included for regular, initial, and followup respondents. In each case, the classification is for all schools and for standby schools only. The sum of the weights for the "all school" classification for each package is an estimate of the target population for each age class. An average of these weight sums represents another estimate of the target population. Similarly for the standby schools, the sum of weights for each package is an estimate of the target population in standby schools. Taking an average of these separate estimates yields an estimate of the target population in standby schools. These estimates are summarized in table 2-20. Since the population and sample percentages in table 2-20 are relatively close, the sample appears to represent students from standby schools in proportion to but slightly lower than the population proportions.

Table 2-15. Summary of 9-year-old package weights in Year 11

| | ALL SCHOOLS | | | | | | STANDBY SCHOOLS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PACKAGE NUMBER | SAMPLE SIZE | SUM OF WEIGHTS | AVERAGE WEIGHT | STANDARD DEVIATION | MINIMUM WEIGHT | MAXIMUM WEIGHT | PACKAGE NUMBER | SAMPLE SIZE | SUM OF WEIGHTS | AVERAGE WEIGHT | STANDARD DEVIATION | MINIMUM WEIGHT | MAXIMUM WEIGHT |
| 01 | 2619 | 3492735. | 1339. | 1089.56 | 119.69 | 6435.54 | 01 | 8 | 45030. | 5629. | 1.81 | 5628.79 | 5629.79 |
| 02 | 2673 | 3544989. | 1326. | 935.16 | 105.04 | 7177.91 | 02 | 49 | 176777. | 3608. | 1788.16 | 1050.39 | 5622.96 |
| 03 | 2613 | 3045748. | 1166. | 790.53 | 127.17 | 4769.17 | 03 | 8 | 11531. | 1441. | 1319.68 | 728.67 | 3579.33 |
| 04 | 2648 | 3714865. | 1403. | 1054.61 | 111.68 | 7276.54 | 04 | 34 | 33992. | 1000. | 372.70 | 594.90 | 1441.02 |
| 05 | 2627 | 3179079. | 1207. | 785.76 | 155.16 | 5271.19 | 05 | 1 | 4999. | 0. | 0.0 | 4999.43 | 4999.43 |
| 06 | 2629 | 3536001. | 1350. | 981.31 | 119.04 | 6984.98 | 06 | 31 | 116035. | 3743. | 2091.62 | 764.29 | 5240.38 |
| 07 | 2667 | 3090689. | 1159. | 730.15 | 137.35 | 4638.64 | 07 | 3 | 4480. | 1493. | 0.58 | 1493.33 | 1493.33 |
| 08 | 2665 | 3369257. | 1264. | 1353.54 | 121.66 | 5630.47 | 08 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 09 | 2650 | 3516756. | 1327. | 1260.17 | 143.16 | 9549.27 | 09 | 12 | 64138. | 5345. | 2.25 | 5344.87 | 5344.87 |
| 10 | 2711 | 3087185. | 1139. | 693.09 | 119.04 | 4552.39 | 10 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 11 | 2623 | 3165933. | 1208. | 817.45 | 127.54 | 4396.16 | 11 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |

Table 2-16. Summary of 13-year-old package weights in Year 11

| PACKAGE NUMBER | ALL SCHOOLS SAMPLE SIZE | SUM OF WEIGHTS | AVERAGE WEIGHT | STANDARD DEVIATION | MINIMUM WEIGHT | MAXIMUM WEIGHT | STANDBY SCHOOLS PACKAGE NUMBER | SAMPLE SIZE | SUM OF WEIGHTS | AVERAGE WEIGHT | STANDARD DEVIATION | MINIMUM WEIGHT | MAXIMUM WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 2786 | 3390402. | 1217. | 715.77 | 188.75 | 6385.34 | 01 | 23 | 74086. | 3221. | 2146.47 | 1036.73 | 6345.34 |
| 02 | 2785 | 3461420. | 1243. | 899.99 | 201.95 | 10957.22 | 02 | 35 | 193646. | 5533. | 2807.86 | 2026.90 | 10957.22 |
| 03 | 2764 | 3253185. | 1176. | 664.02 | 140.15 | 6669.33 | 03 | 18 | 69164. | 3842. | 1135.72 | 3301.35 | 6669.33 |
| 04 | 2759 | 3260495. | 1182. | 785.54 | 171.66 | 6224.25 | 08 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 05 | 2712 | 3274847. | 1208. | 711.74 | 157.29 | 5101.96 | 05 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 06 | 2760 | 3181717. | 1153. | 626.74 | 175.16 | 6884.81 | 06 | 4 | 23690. | 5873. | 1186.19 | 4431.31 | 6884.81 |
| 07 | 2734 | 3335710. | 1220. | 707.47 | 194.54 | 6559.66 | 07 | 13 | 71277. | 5483. | 297.27 | 5001.07 | 6252.50 |
| 08 | 2719 | 3060908. | 1126. | 674.33 | 175.92 | 6678.06 | 08 | 29 | 91155. | 3143. | 2425.70 | 844.63 | 6678.06 |
| 09 | 2857 | 3380816. | 1183. | 771.24 | 238.16 | 6068.69 | 09 | 17 | 97781. | 5749. | 356.71 | 5001.93 | 5900.66 |
| 10 | 2731 | 3425047. | 1254. | 869.73 | 175.06 | 7794.85 | 10 | 15 | 78500. | 5233. | 384.03 | 5087.83 | 6179.20 |
| 11 | 2742 | 3452206. | 1259. | 849.96 | 175.92 | 11372.42 | 11 | 17 | 105171. | 6187. | 2019.61 | 4582.11 | 11372.42 |
| 12 | 2749 | 3342010. | 1216. | 831.84 | 182.38 | 6742.32 | 12 | 11 | 26205. | 2382. | 361.80 | 2004.81 | 2697.21 |
| 13 | 2786 | 3367875. | 1209. | 639.98 | 187.56 | 8126.03 | 13 | 7 | 51084. | 7298. | 565.85 | 6966.38 | 8126.03 |
| 14 | 2772 | 3372724. | 1217. | 712.14 | 161.14 | 8566.31 | 14 | 4 | 24614. | 6154. | 1641.57 | 5283.18 | 8566.31 |
| 15 | 2916 | 3352280. | 1150. | 596.58 | 187.56 | 6966.38 | 15 | 3 | 20899. | 6966. | 3.38 | 6966.38 | 6966.38 |

## Table 2-17. Summary of 17-year-old regular responsdent package weights in Year 11

| | ALL SCHOOLS | | | | | | STANDBY SCHOOLS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PACKAGE NUMBER | SAMPLE SIZE | SUM OF WEIGHTS | AVERAGE WEIGHT | STANDARD DEVIATION | MINIMUM WEIGHT | MAXIMUM WEIGHT | PACKAGE NUMBER | SAMPLE SIZE | SUM OF WEIGHTS | AVERAGE WEIGHT | STANDARD DEVIATION | MINIMUM WEIGHT | MAXIMUM WEIGHT |
| 01 | 1442 | 1689763. | 1263. | 1101.32 | 271.52 | 9181.97 | 01 | 12 | 38388. | 3199. | 0.00 | 3198.99 | 3199.99 |
| 02 | 1598 | 1951158. | 1220. | 1138.73 | 271.52 | 10802.31 | 02 | 17 | 41464. | 2439. | 2095.29 | 1696.83 | 9005.95 |
| 03 | 1698 | 2236957. | 1317. | 1125.23 | 253.35 | 10202.18 | 03 | 22 | 69030. | 3138. | 1403.69 | 2202.85 | 5143.99 |
| 04 | 1627 | 1968182. | 1210. | 704.91 | 197.97 | 4722.14 | 04 | 10 | 29765. | 2977. | 2353.36 | 590.72 | 4567.04 |
| 05 | 1611 | 1893933. | 1176. | 528.92 | 271.52 | 3000.39 | 05 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 06 | 1626 | 1898884. | 1112. | 461.30 | 230.96 | 2843.60 | 06 | 6 | 13187. | 2198. | 0.27 | 2197.75 | 2197.75 |
| 07 | 1695 | 2057963. | 1223. | 1044.84 | 230.96 | 10202.18 | 07 | 11 | 36734. | 3339. | 0.58 | 3339.44 | 3339.44 |
| 08 | 1660 | 1827658. | 1101. | 579.00 | 151.47 | 3593.58 | 08 | 4 | 1573. | 393. | 0.24 | 393.32 | 393.32 |
| 09 | 1639 | 1988143. | 1292. | 710.41 | 258.41 | 6572.77 | 09 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 10 | 1477 | 1894394. | 1283. | 1135.30 | 207.87 | 10202.18 | 10 | 14 | 44015. | 3144. | 2229.54 | 558.79 | 9335.45 |
| 11 | 1647 | 2145245. | 1303. | 866.22 | 260.70 | 6865.78 | 11 | 13 | 5258. | 404. | 0.24 | 404.43 | 404.43 |
| 12 | 1637 | 1836721. | 1122. | 540.03 | 165.24 | 3999.71 | 12 | 1 | 4000. | 0. | 0.0 | 3999.71 | 3999.71 |
| 13 | 1598 | 1825714. | 1142. | 458.86 | 268.24 | 3137.91 | 13 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 14 | 1649 | 2115087. | 1283. | 1076.06 | 207.87 | 10202.18 | 14 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |

Table 2-18. Summary of 17-year-old initial respondent package weights in Year 11

| ALL SCHOOLS | | | | | | | STANDBY SCHOOLS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PACKAGE NUMBER | SAMPLE SIZE | SUM OF WEIGHTS | AVERAGE WEIGHT | STANDARD DEVIATION | MINIMUM WEIGHT | MAXIMUM WEIGHT | PACKAGE NUMBER | SAMPLE SIZE | SUM OF WEIGHTS | AVERAGE WEIGHT | STANDARD DEVIATION | MINIMUM WEIGHT | MAXIMUM WEIGHT |
| 01 | 902 | 1114329. | 1235. | 497.80 | 149.59 | 2320.16 | 01 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 02 | 735 | 981482. | 1335. | 1128.44 | 168.55 | 8626.81 | 02 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 03 | 709 | 878391. | 1239. | 545.99 | 138.49 | 2952.09 | 03 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 04 | 792 | 1001189. | 1264. | 507.72 | 153.12 | 2624.68 | 04 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 05 | 743 | 966589. | 1210. | 536.79 | 148.87 | 5189.66 | 05 | 1 | 5190. | 0. | 0.0 | 5189.66 | 5189.66 |
| 06 | 817 | 1092515. | 1337. | 539.52 | 157.02 | 2551.61 | 06 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 07 | 696 | 961705. | 1398. | 1131.17 | 145.74 | 8524.16 | 07 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 08 | 839 | 1132869. | 1277. | 593.83 | 155.26 | 3629.55 | 08 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 09 | 818 | 1051788. | 1286. | 548.25 | 217.40 | 3523.29 | 09 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 10 | 853 | 990426. | 1161. | 441.32 | 275.21 | 2621.23 | 10 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 11 | 784 | 1137969. | 1451. | 1235.38 | 210.12 | 10011.63 | 11 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 12 | 771 | 1154430. | 1497. | 1199.68 | 233.32 | 8893.72 | 12 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 13 | 783 | 927769. | 1185. | 489.50 | 192.11 | 2935.78 | 13 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 14 | 831 | 1122479. | 1351. | 1060.84 | 171.86 | 9313.52 | 14 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |

## Table 2-19. Summary of 17-year-old followup respondent package weights in Year 11

| ALL SCHOOLS | | | | | | | STANDBY SCHOOLS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PACKAGE NUMBER | SAMPLE SIZE | SUM OF WEIGHTS | AVERAGE WEIGHT | STANDARD DEVIATION | MINIMUM WEIGHT | MAXIMUM WEIGHT | PACKAGE NUMBER | SAMPLE SIZE | SUM OF WEIGHTS | AVERAGE WEIGHT | STANDARD DEVIATION | MINIMUM WEIGHT | MAXIMUM WEIGHT |
| 01 | 190 | 242681. | 1277. | 492.19 | 526.22 | 2114.51 | 01 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 02 | 222 | 346674. | 1562. | 701.85 | 561.27 | 3381.32 | 02 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 03 | 173 | 250414. | 1494. | 816.19 | 493.92 | 3705.28 | 03 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 04 | 127 | 182442. | 1437. | 716.55 | 358.85 | 2521.80 | 04 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 05 | 209 | 289561. | 1385. | 518.25 | 229.35 | 5189.66 | 05 | 1 | 5190. | 0. | 0.0 | 5189.66 | 5189.66 |
| 06 | 145 | 145232. | 1002. | 425.08 | 244.97 | 1926.90 | 06 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 07 | 211 | 320032. | 1517. | 1722.16 | 288.20 | 8698.12 | 07 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 08 | 142 | 189334. | 1333. | 675.73 | 155.26 | 4337.13 | 08 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 09 | 145 | 184921. | 1275. | 489.93 | 533.77 | 1875.09 | 09 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 10 | 193 | 301375. | 1562. | 604.69 | 573.31 | 3010.23 | 10 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 11 | 147 | 206359. | 1404. | 632.87 | 219.89 | 2528.25 | 11 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 12 | 187 | 267208. | 1429. | 1059.46 | 336.30 | 8739.03 | 12 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 13 | 256 | 315606. | 1233. | 528.21 | 298.15 | 2319.61 | 13 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |
| 14 | 153 | 189422. | 1238. | 431.51 | 462.11 | 1886.17 | 14 | 0 | 0. | 0. | 0.0 | 0.0 | 0.0 |

Table 2-20. Comparison of population and sample percentages in standby schools by age class

| Category | Average weight sum | | Population percentage in standby schools | Sample respondents | | Sample percentage in standby schools |
|---|---|---|---|---|---|---|
| | All schools | Standby schools | | All schools | Standby schools | |
| 9-year-olds | 3,339,332 | 41,544 | 1.2% | 29,103 | 146 | 0.5% |
| 13-year-olds | 3,298,143 | 61,794 | 1.9% | 41,574 | 196 | 0.5% |
| 17-year-olds regular respondents | 1,957,038 | 20,244 | 1.0% | 22,529 | 110 | 0.5% |
| 17-year-olds initial respondents | 1,029,567 | 371 | 0.0%* | 11,085 | 1 | 0.0%* |
| 17-year-olds followup respondents | 244,305 | 201 | 0.1% | 2,495 | 1 | 0.0%* |

* Less than 0.05%.

The actual sample sizes compared with the planned sample sizes are reported in Table 2-21. Percentage differences between planned and actual sample sizes varied from 4 percent below to 12 percent above the planned sample size.

Tables 2-22 through 2-26 present frequency distribution of package weights by size of weight for all schools. Separate tables are presented for 9-, 13-, and 17-year-old regular respondents and for 17-year-old initial and followup respondents. The entries for each package are numbers of respondents for the package whose weights fell within the specified range. Tables 2-27 through 2-31 show comparable distributions for respondents selected from standby schools only. All package weights in excess of 7,000 and all package weights less than 100 are documented in Tables 2-23, 2-33, and 2-34. All school weights in excess of 600 and all school weights less than 10 are also documented in these tables.

Table 2-21. Summary of planned and actual sample sizes in Year 11 of National Assessment

| Package number | Age 9 | | | Age 13 | | | Age 17 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Planned sample size | Actual sample size | Percent difference * | Planned sample size | Actual sample size | Percent difference * | Planned sample size | Actual sample size | Percent difference * |
| 01 | 2592 | 2609 | +1% | 2592 | 2786 | +7% | 2592 | 2584 | -0% |
| 02 | 2592 | 2673 | +3% | 2592 | 2785 | +7% | 2592 | 2545 | -2% |
| 03 | 2592 | 2613 | +1% | 2592 | 2766 | +7% | 2592 | 2580 | -0% |
| 04 | 2592 | 2648 | +2% | 2592 | 2759 | +6% | 2592 | 2546 | -2% |
| 05 | 2592 | 2627 | +1% | 2592 | 2712 | +5% | 2592 | 2608 | +1% |
| 06 | 2592 | 2620 | +1% | 2592 | 2760 | +6% | 2592 | 2588 | -0% |
| 07 | 2592 | 2667 | +3% | 2592 | 2734 | +5% | 2592 | 2579 | -1% |
| 08 | 2592 | 2665 | +3% | 2592 | 2719 | +5% | 2592 | 2611 | +1% |
| 09 | 2592 | 2650 | +2% | 2592 | 2857 | +10% | 2592 | 2502 | -3% |
| 10 | 2592 | 2711 | +5% | 2592 | 2731 | +5% | 2592 | 2523 | -3% |
| 11 | 2592 | 2620 | +1% | 2592 | 2742 | +6% | 2592 | 2578 | -1% |
| 12 | NA | NA | NA | 2592 | 2749 | +6% | 2592 | 2595 | +0% |
| 13 | NA | NA | NA | 2592 | 2786 | +7% | 2592 | 2637 | +2% |
| 14 | NA | NA | NA | 2592 | 2772 | +7% | 2592 | 2633 | +2% |
| 15 | NA | NA | NA | 2592 | 2916 | +12% | NA | NA | NA |

* (Actual sample size - Planned sample size)/Planned sample size.

Table 2-22. Frequency distribution in number of respondents for 9-year-old package weights in all Year 11 schools

| PACKAGE NUMBER | 0.- 99. | 100.- 499. | 500.- 999. | 1000.- 1499. | 1500.- 1999. | 2000.- 2499. | 2500.- 2999. | 3000.- 3999. | 4000.- 4999. | 5000.- 5999. | 6000.- 6999. | 7000.- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0 | 422 | 756 | 701 | 313 | 107 | 117 | 82 | 55 | 37 | 19 | 0 |
| 02 | 0 | 368 | 870 | 697 | 359 | 158 | 114 | 148 | 0 | 20 | 0 | 9 |
| 03 | 0 | 382 | 985 | 631 | 258 | 211 | 33 | 74 | 39 | 0 | 0 | 0 |
| 04 | 0 | 209 | 904 | 717 | 376 | 189 | 80 | 108 | 0 | 18 | 33 | 14 |
| 05 | 0 | 340 | 805 | 934 | 300 | 151 | 0 | 91 | 17 | 19 | 0 | 0 |
| 06 | 0 | 320 | 813 | 697 | 325 | 232 | 53 | 104 | 34 | 21 | 21 | 0 |
| 07 | 0 | 334 | 1021 | 577 | 359 | 114 | 74 | 74 | 15 | 0 | 0 | 0 |
| 08 | 0 | 369 | 945 | 715 | 259 | 136 | 45 | 74 | 75 | 49 | 0 | 0 |
| 09 | 0 | 372 | 896 | 759 | 224 | 176 | 45 | 56 | 32 | 68 | 0 | 22 |
| 10 | 0 | 269 | 1044 | 808 | 263 | 124 | 63 | 47 | 22 | 0 | 0 | 0 |
| 11 | 0 | 335 | 882 | 765 | 366 | 71 | 42 | 136 | 25 | 0 | 0 | 0 |

Table 2-23. Frequency distribution in number of respondents for 13-year-old package weights in all Year 11 schools

| PACKAGE NUMBER | 0,- 99, | 100,- 499, | 500,- 999, | 1000,- 1499, | 1500,- 1999, | 2000,- 2499, | 2500,- 2999, | 3000,- 3999, | 4000,- 4999, | 5000,- 5999, | 6000,- 6999, | 7000,- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0 | 230 | 925 | 971 | 405 | 131 | 24 | 62 | 29 | 0 | 5 | 0 |
| 02 | 0 | 258 | 886 | 973 | 436 | 93 | 38 | 37 | 47 | 0 | 2 | 15 |
| 03 | 0 | 320 | 912 | 955 | 304 | 145 | 53 | 75 | 2 | 0 | 2 | 0 |
| 04 | 0 | 256 | 1031 | 892 | 360 | 100 | 33 | 36 | 35 | 0 | 16 | 0 |
| 05 | 0 | 266 | 901 | 976 | 359 | 80 | 57 | 20 | 44 | 9 | 0 | 0 |
| 06 | 0 | 258 | 1054 | 951 | 277 | 82 | 126 | 0 | 7 | 3 | 2 | 0 |
| 07 | 0 | 172 | 893 | 1158 | 294 | 125 | 0 | 76 | 0 | 12 | 8 | 0 |
| 08 | 0 | 318 | 858 | 1124 | 248 | 76 | 30 | 46 | 10 | 3 | 6 | 0 |
| 09 | 0 | 208 | 981 | 1184 | 291 | 71 | 51 | 13 | 18 | 29 | 11 | 0 |
| 10 | 0 | 209 | 933 | 986 | 425 | 65 | 37 | 15 | 13 | 30 | 2 | 16 |
| 11 | 0 | 248 | 957 | 889 | 400 | 55 | 27 | 137 | 4 | 23 | 0 | 2 |
| 12 | 0 | 255 | 735 | 1093 | 491 | 89 | 28 | 38 | 28 | 0 | 0 | 0 |
| 13 | 0 | 166 | 856 | 1142 | 429 | 72 | 73 | 41 | 0 | 0 | 5 | 2 |
| 14 | 0 | 209 | 858 | 1096 | 370 | 99 | 29 | 80 | 22 | 12 | 0 | 1 |
| 15 | 0 | 228 | 996 | 1170 | 352 | 97 | 23 | 32 | 15 | 0 | 3 | 0 |

Table 2-24. Frequency distribution in number of respondents for 17-year-old regular respondent package weights in all Year 11 schools

| PACKAGE NUMBER | 0.- 99. | 100.- 499. | 500.- 999. | 1000.- 1499. | 1500.- 1999. | 2000.- 2499. | 2500.- 2999. | 3000.- 3999. | 4000.- 4999. | 5000.- 5999. | 6000.- 6999. | 7000.- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0 | 73 | 494 | 711 | 128 | 19 | 0 | 43 | 0 | 0 | 1 | 20 |
| 02 | 0 | 136 | 514 | 661 | 221 | 25 | 0 | 11 | 0 | 0 | 1 | 19 |
| 03 | 0 | 139 | 466 | 718 | 211 | 98 | 0 | 28 | 13 | 7 | 0 | 18 |
| 04 | 0 | 153 | 539 | 502 | 145 | 103 | 40 | 27 | 18 | 0 | 0 | 0 |
| 05 | 0 | 134 | 499 | 656 | 203 | 77 | 33 | 19 | 0 | 0 | 0 | 0 |
| 06 | 0 | 127 | 621 | 521 | 179 | 55 | 23 | 0 | 0 | 0 | 0 | 0 |
| 07 | 0 | 137 | 484 | 872 | 121 | 15 | 10 | 23 | 0 | 0 | 0 | 18 |
| 08 | 0 | 239 | 595 | 659 | 175 | 29 | 19 | 43 | 0 | 0 | 0 | 0 |
| 09 | 0 | 87 | 391 | 667 | 266 | 36 | 79 | 0 | 0 | 0 | 13 | 0 |
| 10 | 0 | 96 | 429 | 640 | 254 | 0 | 32 | 0 | 0 | 8 | 0 | 18 |
| 11 | 0 | 117 | 450 | 716 | 221 | 62 | 16 | 5 | 42 | 0 | 18 | 0 |
| 12 | 0 | 139 | 577 | 654 | 190 | 63 | 0 | 21 | 0 | 0 | 0 | 0 |
| 13 | 0 | 81 | 539 | 698 | 203 | 67 | 0 | 10 | 0 | 0 | 0 | 0 |
| 14 | 0 | 97 | 529 | 617 | 204 | 78 | 9 | 16 | 0 | 0 | 0 | 18 |

Table 2-25. Frequency distribution in number of respondents for 17-year-old initial respondent package weights in all Year 11 schools

| PACKAGE NUMBER | 0.- 99. | 100.- 499. | 500.- 999. | 1000.- 1499. | 1500.- 1999. | 2000.- 2499. | 2500.- 2999. | 3000.- 3999. | 4000.- 4999. | 5000.- 5999. | 6000.- 6999. | 7000.- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0 | 74 | 228 | 335 | 189 | 76 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02 | 0 | 43 | 235 | 248 | 167 | 28 | 0 | 0 | 0 | 0 | 0 | 14 |
| 03 | 0 | 54 | 191 | 237 | 159 | 54 | 14 | 0 | 0 | 0 | 0 | 0 |
| 04 | 0 | 55 | 173 | 340 | 171 | 38 | 15 | 0 | 0 | 0 | 0 | 0 |
| 05 | 0 | 105 | 145 | 321 | 201 | 13 | 0 | 7 | 0 | 1 | 0 | 0 |
| 06 | 0 | 56 | 196 | 226 | 245 | 77 | 17 | 0 | 0 | 0 | 0 | 0 |
| 07 | 0 | 34 | 178 | 253 | 196 | 0 | 19 | 0 | 0 | 0 | 0 | 14 |
| 08 | 0 | 52 | 198 | 310 | 147 | 92 | 0 | 10 | 0 | 0 | 0 | 0 |
| 09 | 0 | 45 | 203 | 286 | 238 | 36 | 0 | 10 | 0 | 0 | 0 | 0 |
| 10 | 0 | 71 | 223 | 366 | 174 | 10 | 9 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 54 | 161 | 303 | 197 | 43 | 0 | 13 | 0 | 0 | 0 | 13 |
| 12 | 0 | 34 | 139 | 282 | 215 | 58 | 0 | 7 | 0 | 0 | 0 | 16 |
| 13 | 0 | 74 | 179 | 349 | 160 | 9 | 12 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 43 | 231 | 325 | 197 | 12 | 14 | 0 | 0 | 0 | 0 | 12 |

Table 2-26. Frequency distribution in number of respondents for 17-year-old followup respondent package weights in all Year 11 schools

| PACKAGE NUMBER | 0.- 99. | 100.- 499. | 500.- 999. | 1000.- 1499. | 1500.- 1999. | 2000.- 2499. | 2500.- 2999. | 3000.- 3999. | 4000.- 4999. | 5000.- 5999. | 6000.- 6999. | 7000.- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 0 | 1 | 55 | 85 | 30 | 20 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 64 | 34 | 75 | 27 | 0 | 17 | 0 | 0 | 0 | 0 |
| 13 | 0 | 14 | 47 | 22 | 45 | 13 | 30 | 1 | 0 | 0 | 0 | 0 |
| 14 | 0 | 18 | 24 | 24 | 28 | 18 | 15 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 14 | 31 | 86 | 72 | 6 | 0 | 0 | 0 | 1 | 0 | 0 |
| 16 | 0 | 19 | 47 | 43 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 0 | 35 | 48 | 83 | 11 | 12 | 0 | 11 | 0 | 0 | 0 | 13 |
| 18 | 0 | 27 | 5 | 73 | 11 | 22 | 3 | 0 | 1 | 0 | 0 | 0 |
| 19 | 0 | 0 | 44 | 42 | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1? | 0 | 0 | 33 | 70 | 41 | 36 | 0 | 13 | 0 | 0 | 0 | 0 |
| 11 | 0 | 19 | 10 | 36 | 41 | 23 | 10 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 19 | 35 | 27 | 99 | 13 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 27 | 60 | 99 | 56 | 14 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 21 | 29 | 50 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 2-27. Frequency distribution in number of respondents for 9-year-old package weights in Year 11 standby schools

| PACKAGE NUMBER | 0.- 99. | 100.- 499. | 500.- 999. | 1000.- 1499. | 1500.- 1999. | 2000.- 2499. | 2500.- 2999. | 3000.- 3999. | 4000.- 4999. | 5000.- 5999. | 6000.- 6999. | 7000.- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 15 | 0 | 20 | 0 | 0 |
| 03 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 04 | 0 | 0 | 21 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 06 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 |
| 07 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 2-28. Frequency distribution in number of respondents for 13-year-old package weights in Year 11 standby schools

| PACKAGE NUMBER | 0.- 99. | 100.- 499. | 500.- 999. | 1000.- 1499. | 1500.- 1999. | 2000.- 2499. | 2500.- 2999. | 3000.- 3999. | 4000.- 4999. | 5000.- 5999. | 6000.- 6999. | 7000.- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 8 | 0 | 0 | 5 | 0 |
| 02 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 8 | 0 | 2 | 15 |
| 03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 2 | 0 | 2 | 0 |
| 04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 |
| 07 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 1 | 0 |
| 08 | 0 | 0 | 13 | 1 | 0 | 0 | 0 | 6 | 0 | 3 | 6 | 0 |
| 09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 2 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 0 | 2 |
| 12 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |

Table 2-29. Frequency distribution in number of respondents for 17-year-old regular respondent package weights in Year 11 standby schools

| PACKAGE NUMBER | 0.- 99. | 100.- 499. | 500.- 999. | 1000.- 1499. | 1500.- 1999. | 2000.- 2499. | 2500.- 2999. | 3000.- 3999. | 4000.- 4999. | 5000.- 5999. | 6000.- 6999. | 7000.- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 |
| 02 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 7 | 0 | 0 |
| 04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 |
| 08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 2-30. Frequency distribution in number of respondents for 17-year-old initial respondent package weights in Year 11 standby schools

| PACKAGE NUMBER | 0.- 99. | 100.- 499. | 500.- 999. | 1000.- 1499. | 1500.- 1999. | 2000.- 2499. | 2500.- 2999. | 3000.- 3999. | 4000.- 4999. | 5000.- 5999. | 6000.- 6999. | 7000.- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 2-31. Frequency distribution in number of respondents for 17-year-old followup respondent package weights in Year 11 standby schools



OMITTED DUE TO CONFIDENTIALITY

Table 2-32
Explanation for small and large package and school weights for 9-year-olds in Year 11

OMITTED DUE TO CONFIDENTIALITY

Table 2-33

**Explanation for small and large package and school weights for 13-year-olds in Year 11**

OMITTED DUE TO CONFIDENTIALITY

Table 2-33
Explanation for small and large package and school weights for 13-year-olds in Year 11
(continued)

OMITTED DUE TO CONFIDENTIALITY

Explanations for small and large package and school weights for 17-year-olds in Year 11

Table 2-34

OMITTED DUE TO CONFIDENTIALITY

Explanations for small and large package and school weights for 17-year-olds in Year 11 (continued)

Table 2-34

OMITTED DUE TO CONFIDENTIALITY

Tables 2-35 through 2-38 are frequency distributions of school weights in number of respondents for all schools and standby schools. Classification is by 9-, 13-, and 17-year-old regular respondents and by 17-year-old initial and followup respondents. The total numbers of respondents for these classifications according to tables 2-35 through 2-38 were, respectively, 29,103, 41,574, 22,529, and 13,580. These totals agree with the sample size totals in table 2-20. All school weights in excess of 600 and all school weights less than 10 are documented in tables 2-32, 2-33 and 2-34. The sums of school weights for the age classes are summarized in table 2-39. These figures were extracted from tables 2-35 through 2-38. The figure in each case is an estimate of the age class target population. It can be seen from this table that the weights estimated 103, 97, and 96 percent of the 9-, 13-, and 17-year-old target population, respectively, estimated from Census data.

The proportion correct responses to NAEP exercise-k can be estimated as

$$P_k = \frac{\sum_{i=1}^{S_{\alpha k}} W_{\alpha ijk} \sum_{j=1}^{n'_{\alpha ik}} X_{\alpha ijk}}{\sum_{i=1}^{S_{\alpha k}} W_{\alpha ijk}\, n'_{\alpha ik}},$$

where

$n'_{\alpha ik}$ = the number of students in school-i taking exercise-k in package-$\alpha$;

## Table 2-35. Year 11 school weights for 9-year-olds



PACKAGE 01

| | | | |
|---|---|---|---|
| TOTAL N-COUNT | = | 29163 | 146 |
| SUM OF WEIGHTS | = | 3339332. | 41544. |
| AVERAGE WEIGHT | = | 115. | 285. |
| STANDARD DEVIATION | = | 85.34 | 188.26 |
| SUM OF SQUARED WEIGHTS | = | 595118814. | 16962040. |
| DESIGN EFFECT | = | 1.5532 | 1.4347 |

FREQUENCY DISTRIBUTIONS

| | | | | | |
|---|---|---|---|---|---|
| 0. | - | 9. | 0 | 0 | 0 |
| 10. | - | 49. | 4828 | 7 | |
| 50. | - | 99. | 10255 | 51 | |
| 100. | - | 149. | 7946 | 15 | |
| 150. | - | 199. | 3072 | 0 | |
| 200. | - | 249. | 998 | 0 | |
| 250. | - | 299. | 757 | 0 | |
| 300. | - | 399. | 625 | 17 | |
| 400. | - | 499. | 432 | 45 | |
| 500. | - | 599. | 154 | 15 | |
| 600. | + | | 36 | 0 | |

Table 2-36. Year 11 school weights for 13-year-olds

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PACKAGE 01

| | | | |
|---|---|---|---|
| TOTAL N-COUNT | = | 91574 | |
| SUM OF WEIGHTS | = | 3298183. | |
| AVERAGE WEIGHT | = | 79. | |
| STANDARD DEVIATION | = | 46.87 | |
| SUM OF SQUARED WEIGHTS | = | 352969808. | |
| DESIGN EFFECT | = | 1.3490 | |

FREQUENCY DISTRIBUTIONS

| | | | |
|---|---|---|---|
| 0. | - 9. | 0 | |
| 10. | - 49. | 8750 | |
| 50. | - 99. | 24452 | |
| 100. | - 149. | 6404 | |
| 150. | - 199. | 873 | |
| 200. | - 249. | 434 | |
| 250. | - 299. | 335 | |
| 300. | - 399. | 235 | |
| 400. | - 499. | 55 | |
| 500. | - 599. | 31 | |
| 600. | + | 5 | |

| | | | |
|---|---|---|---|
| TOTAL N-COUNT | = | 196 | |
| SUM OF WEIGHTS | = | 61794. | |
| AVERAGE WEIGHT | = | 315. | |
| STANDARD DEVIATION | = | 151.26 | |
| SUM OF SQUARED WEIGHTS | = | 23943499. | |
| DESIGN EFFECT | = | 1.2290 | |

FREQUENCY DISTRIBUTIONS

| | | | |
|---|---|---|---|
| 0. | - 9. | 0 | |
| 10. | - 49. | 0 | |
| 50. | - 99. | 24 | |
| 100. | - 149. | 15 | |
| 150. | - 199. | 6 | |
| 200. | - 249. | 14 | |
| 250. | - 299. | 15 | |
| 300. | - 399. | 74 | |
| 400. | - 499. | 28 | |
| 500. | - 599. | 15 | |
| 600. | + | 5 | |

## Table 2-37. Year 11 schools weights for 17-year-old regular respondents

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PACKAGE 21

| | | | |
|---|---|---|---|
| TOTAL N-COUNT | = | 22529 | |
| SUM OF WEIGHTS | = | 1957038. | |
| AVERAGE WEIGHT | = | 87. | |
| STANDARD DEVIATION | = | 53.54 | |
| SUM OF SQUARED WEIGHTS | = | 252583447. | |
| DESIGN EFFECT | = | 1.4858 | |

FREQUENCY DISTRIBUTIONS

| | | | |
|---|---|---|---|
| 0. | - | 9. | 5 |
| 10. | - | 49. | 3722 |
| 50. | - | 99. | 13481 |
| 100. | - | 149. | 4442 |
| 150. | - | 199. | 351 |
| 200. | - | 249. | 281 |
| 250. | - | 299. | 22 |
| 300. | - | 399. | 88 |
| 400. | - | 499. | 31 |
| 500. | - | 599. | 2 |
| 600. | + | | 100 |

| | | | |
|---|---|---|---|
| TOTAL N-COUNT | = | 110 | |
| SUM OF WEIGHTS | = | 27244. | |
| AVERAGE WEIGHT | = | 184. | |
| STANDARD DEVIATION | = | 122.65 | |
| SUM OF SQUARED WEIGHTS | = | 5355494. | |
| DESIGN EFFECT | = | 1.4402 | |

FREQUENCY DISTRIBUTIONS

| | | | |
|---|---|---|---|
| 0. | - | 9. | 0 |
| 10. | - | 49. | 27 |
| 50. | - | 99. | 0 |
| 100. | - | 149. | 15 |
| 150. | - | 199. | 21 |
| 200. | - | 249. | 25 |
| 250. | - | 299. | 1 |
| 300. | - | 399. | 21 |
| 400. | - | 499. | 0 |
| 500. | - | 599. | 0 |
| 600. | + | | 0 |

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Table 2-38. Year 11 school weights for 17-year-old initial and followup respondents

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PACKAGE 91

| | | | | | |
|---|---|---|---|---|---|
| TOTAL N-COUNT | = | 13580 | TOTAL N-COUNT | = | 2 |
| SUM OF WEIGHTS | = | 1273877. | SUM OF WEIGHTS | = | 572. |
| AVERAGE WEIGHT | = | 94. | AVERAGE WEIGHT | = | 286. |
| STANDARD DEVIATION | = | 1158.54 | STANDARD DEVIATION | = | 404.56 |
| SUM OF SQUARED WEIGHTS | = | 18345480560. | SUM OF SQUARED WEIGHTS | = | 327344. |
| DESIGN EFFECT | = | 153.5243 | DESIGN EFFECT | = | 2.0000 |

FREQUENCY DISTRIBUTIONS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0. | - | 9. | [illegible] | 0. | - | 9. | 0 |
| 10. | - | 49. | 9 | 10. | - | 49. | 0 |
| 50. | - | 99. | 11 | 50. | - | 99. | 1 |
| 100. | - | 149. | 9 | 100. | - | 149. | 0 |
| 150. | - | 199. | 8 | 150. | - | 199. | 0 |
| 200. | - | 249. | 15 | 200. | - | 249. | 0 |
| 250. | - | 299. | 8 | 250. | - | 299. | 0 |
| 300. | - | 399. | 15 | 300. | - | 399. | 0 |
| 400. | - | 499. | 14 | 400. | - | 499. | 0 |
| 500. | - | 599. | 7 | 500. | - | 599. | 2 |
| 600. | + | | 13520 | 600. | + | | 0 |

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Table 2-39. Proportion of target population estimated by Year 11 sample

| | 9-year-olds | 13-year-olds | 17-year-old regular, initial and followup respondents |
|---|---|---|---|
| 1970 Census estimate of total population | 3,458,333 | 3,639,614 | 3,982,310 |
| Proportion of age class enrolled in school | .99 | .99 | .90 |
| Proportion of age class enrolled who are in grades surveyed | .99 | .98 | .98 |
| Proportion NAEP-eligible* | .96 | .96 | .96 |
| Target population estimate from Census data | 3,253,932 | 3,389,907 | 3,371,902 |
| Target population estimate from school weights | 3,339,332 | 3,298,143 | 3,230,910 |
| Proportion of target population estimated by sample | 1.03 | .97 | .96 |

* Estimated from Year 09 data.

$X_{\alpha ijk}$ = 1, if student-j's response to exercise-k in package-α administered in school-i was correct;

0, otherwise;

$W_{\alpha ijk}$ = the weight for the package-α containing exercise-k administered in school-i to student-j;

$S_{\alpha k}$ = the total number of schools where the package-α containing exercise-k was administered.

The effect of unequal weighting on the variance of NAEP estimates can be approximated by the following ratio:

$$\frac{n \sum_{i=1}^{S_{\alpha k}} W_{\alpha ijk}^2 \, n'_{\alpha ik}}{\left[\sum_{i=1}^{S_{\alpha k}} W_{\alpha ijk} \, n'_{\alpha ik}\right]^2}$$

where n is the package sample size, i.e.,

$$n = \sum_{i=1}^{S_{\alpha k}} n'_{\alpha ik} .$$

This statistic approximates the unequal weighting effect of the NEAP design as compared to a self-weighting sample. Ideally, the ratio should be 1.0000. Table 2-40 lists this ratio for each package at each age class. The ratio ranges from 1.1612 to 1.9014. The average ratio is 1.5415, 1.3634, and 1.4773 for 9-, 13-, and 17-year-olds, respectively.

Table 2-40. Unequal weighting effect of NAEP design compared to self-weighting sample

| 9-year-olds | | 13-year-olds | | 17-year-olds | |
|---|---|---|---|---|---|
| Package number | Ratio | Package number | Ratio | Package number | Ratio |
| 01 | 1.6621 | 01 | 1.3458 | 01 | 1.7596 |
| 02 | 1.4970 | 02 | 1.5242 | 02 | 1.8585 |
| 03 | 1.4598 | 03 | 1.3235 | 03 | 1.7291 |
| 04 | 1.5649 | 04 | 1.3978 | 04 | 1.3393 |
| 05 | 1.4253 | 05 | 1.3473 | 05 | 1.2016 |
| 06 | 1.5282 | 06 | 1.2955 | 06 | 1.1718 |
| 07 | 1.3968 | 07 | 1.3361 | 07 | 1.7271 |
| 08 | 1.6942 | 08 | 1.3587 | 08 | 1.2764 |
| 09 | 1.9014 | 09 | 1.4246 | 09 | 1.3022 |
| 10 | 1.3703 | 10 | 1.4808 | 10 | 1.7802 |
| 11 | 1.4575 | 11 | 1.4556 | 11 | 1.4416 |
| | | 12 | 1.2700 | 12 | 1.2315 |
| Average | 1.5425 | 13 | 1.2802 | 13 | 1.1612 |
| | | 14 | 1.3425 | 14 | 1.7031 |
| | | 15 | 1.2692 | | |
| | | Average | 1.3634 | Average | 1.4773 |

## 2.6 DOC, TOC, and STOC Classification of Schools

National Assessment reports results by the following seven size and type of community (STOC) categories: extreme rural, low metropolitan, high metropolitan, main big city, urban fringe, medium city, and small places. These categories are defined in Table 2-41. Assignment of NAEP respondents to STOC categories is a form of poststratification by school based on (1) size and location of place as determined from Census data, maps, and ZIP code information, and (2) estimated percentage distributions of students by location of home community and parental occupation category. In the determination of STOC categories, sample schools were first classified by derived size of community (DOC), a set of four categories based on size of place and location with respect to urbanized areas of large cities. In order to identify schools in the three extreme types of community, each school was assigned to one of four TOC categories. The STOC classifications were made by considering the DOC and TOC classifications together. Detailed description of procedures for determining DOC, TOC, and STOC classifications follow in section 2.6.1 through 2.6.5. Results of the DOC, TOC, and STOC classification are reported separately by age class in section 2.6.6.

### 2.6.1 DOC

The following definitions of DOC were used in Year 11:

| Code | Class | Limits |
|---|---|---|
| 1 | Big City (BC) | Within the city limits of a city with population greater than or equal to 200,000; within the city limits of one of two or more central cities of an urbanized area (UA) with combined population greater than or equal to 200,000. |
| 2 | Urban Fringe | Outside the city limits but within the UA of a Big City (BC). |

Table 2-41. National Assessment size and type of community (STOC) reporting categories*

| Size and type of community (STOC) categories | Reporting category | Description |
|---|---|---|
| 1 | Extreme rural | Sample schools or segments† in communities with a population less than 10,000 and in the 90-99th percentiles of the extreme rural index. |
| 2 | Low metro | Sample schools or segments in a city†† or the urbanized area of a city with a population greater than 200,000 and in the 90-99th percentiles of the low metro index. |
| 3 | High metro | Sample schools or segments in a city or the urbanized area of a city with a population greater than 200,000 and in the 90-99th pecentiles of the high metro index. |
| 4 | Main big city | Sample schools or segments within the city limits of a city with a population greater than 200,000 and not classified as high metro or low metro. |
| 5 | Urban fringe | Sample schools or segments in the urbanized area of a big city but outside the city limits and not classified as low metro or high metro. |
| 6 | Medium city | Sample schools or segments in a city with a population between 25,000 and 200,000 not located in the urbanized area of a big city. |
| 7 | Small place | Sample schools or segments in a community with a population less than 25,000 not located in the urbanized area of a big city or classified as extreme rural. |

* Portions of this table excerpted from General Information Yearbook, National Assessment of Educational Progress, Report No. 03/04-GIY. December 1974.

† The segments mentioned here relate to area segments from the household samples of young adults conducted in Year 01 through 05 and Year 08.

†† In this table the term "city" can also mean twin or triplet central cities of an urbanized area.

| | | |
|---|---|---|
| 3 | Medium City (MC) | Within the city limits of a place with a total population greater than or equal to 25,000 but less than 200,000; this place must not be in the UA of a BC. |
| 4 | Small Place (SP) | Open country or a place with a total population less than 25,000; this place must not be in the UA of a BC. |

2.6.2 TOC

TOC codes were assigned on the basis of percentage distributions obtained from Principal's Questionnaire data, together with consideration of the DOC codes already assigned. An example of a Principal's Questionnaire is included as Appendix A.

Answers to Question 2 of the Principal's Questionnaire for each age class provided principal's estimates of the proportions of the students living in each of three size-of-community categories:

| Code | Description |
|---|---|
| A | In a rural area (a total population of less than 2,500). |
| B | In a place with a population of 2,500 to 10,000. |
| C | In a place with a population of over 10,000. |

Replies to Question 3 gave the principals' estimates of percentages of parents in each of six occupation categories:

| Code | Description |
|---|---|
| A | Professional or managerial personnel. |
| B | Sales, clerical, technical, or skilled workers. |
| C | Factory or other blue collar workers. |
| D | Farm workers. |
| E | Not regularly employed. |
| F | On welfare. |

For each of the three age groups, the following procedure was used to assign schools to the four TOC categories:

2.6.2.1 Extreme Rural - TOC 1. Each school was assigned a rural index based on occupation percentages, DOC code, and size of community. The index was calculated by the use of the formula [D - (C + 2A)]; the letters represent the percentages coded from question 3 of the Principal's Questionnaire; high values of this index result from relatively high percentages of persons employed in agriculture and relatively low percentages in professional, managerial, and blue collar jobs subject to the constraints that

(A) the school had to be DOC 4;

(B) the percentage farm workers had to be nonzero (Question 3, category D on the Principal's Questionnaire);

(C) the size-of-community percentages had to be nonzero for rural areas and zero for all other categories except small town (Question 2, categories A and B, respectively, on the Principal's Questionnaire).

Schools not qualifying were assigned indices of (-200). Schools were then arrayed in descending order of rural index with cumulative sample sizes recorded, and schools included in the first 10 percent of total sample size were assigned a TOC code of 1.

2.6.2.2 Extreme Inner City - TOC 2. The same method used for TOC 1 was used for TOC 2, with the formula (E + F - A) providing high inner city index values for schools with relatively high percentages unemployed and on welfare and relatively low percentages in professional and managerial occupations. The only constraint was that the school had to be in either DOC category 1 or 2.

2.6.2.3 Extreme Affluent Suburb - TOC 3. The method and constraint used were the same as for TOC 2, with the formula [A - (C + D + E + F)]

providing high affluent suburb indices for schools with relatively high percentages of professional and managerial personnel and relatively low percentages of blue collar workers, agricultural workers, unemployed persons, and welfare recipients.

2.6.2.4 Others - TOC 4. All schools not assigned to categories 1, 2, or 3 were classified as TOC 4.

2.6.3 STOC

STOC categories were defined to represent simple combinations of DOC and TOC codes:

| | |
|---|---|
| TOC 1 | = STOC 1 |
| TOC 2 | = STOC 2 |
| TOC 3 | = STOC 3 |
| DOC 1 + TOC 4 | = STOC 4 |
| DOC 2 + TOC 4 | = STOC 5 |
| DOC 3 + TOC 4 | = STOC 6 |
| DOC 4 + TOC 4 | = STOC 7 |

2.6.4 Formation of DOC Codes

By the time that the STOC categories for Year 11 were to be defined, the basic information for each school and the replies to the questions on the Principal's Questionnaires had been recorded on disk. For each of the three age groups a printout of school identification data, addresses, and ZIP codes was made, and DOC codes were then defined on the basis of 1970 census populations and locations as shown by census maps, road maps, ZIP code maps, and the National ZIP Code Directory.

For efficiency in the assignment of DOC codes, a set of standardized procedures was developed and used.

2.6.4.1 Assignment of DOC Codes Using Size of Community (SOC) Codes. Using a list of PSU numbers and the names of counties included, the particular procedure to be followed for each PSU was determined and recorded.

A. For each PSU classified as SOC 1, as indicated by the second digit of the PSU number, the DOC code was determined on the basis of post office address, ZIP code, ZIP code map, census map of the urbanized area, and populations of places not in the urbanized area, using the flow chart shown in figure 2-1.

B. For each PSU classified as SOC 2 or SOC 3, the total population of the SMSA central city or cities was obtained from a 1970 census report, and for those with cities having total populations of 200,000 and over the same procedure was followed as for SOC 1.

C. For each remaining PSU classified as SOC 2 or SOC 3, names of places with populations of 25,000 and over were obtained from a census report, and using a ZIP code directory, each place was identified as to whether it had a single ZIP code or more than one ZIP code; the names of the places and the ZIP code information were recorded.

1. All schools in places with populations of 25,000 or over having a single ZIP code were classified as DOC 3.

2. For each school in a place with more than one ZIP code, the ZIP code, the ZIP code map, and a map showing the city limits were used to establish its location; if the school was located inside the city limits, the classification was DOC 3; if the school was located outside the city limits, the classification was DOC 4.

3. All other schools were classified as DOC 4.

D. For PSUs classified as SOC 4 and SOC 5, county populations were obtained from census reports; for each PSU with every county under 25,000 total population, all schools were classified as DOC 4.

E. For SOC 4 or 5, PSUs with one or more counties whose populations were 25,000 or over, the procedure for SOC 2 or 3 outlined previously in C was used for the assignment of DOC 3 or DOC 4.

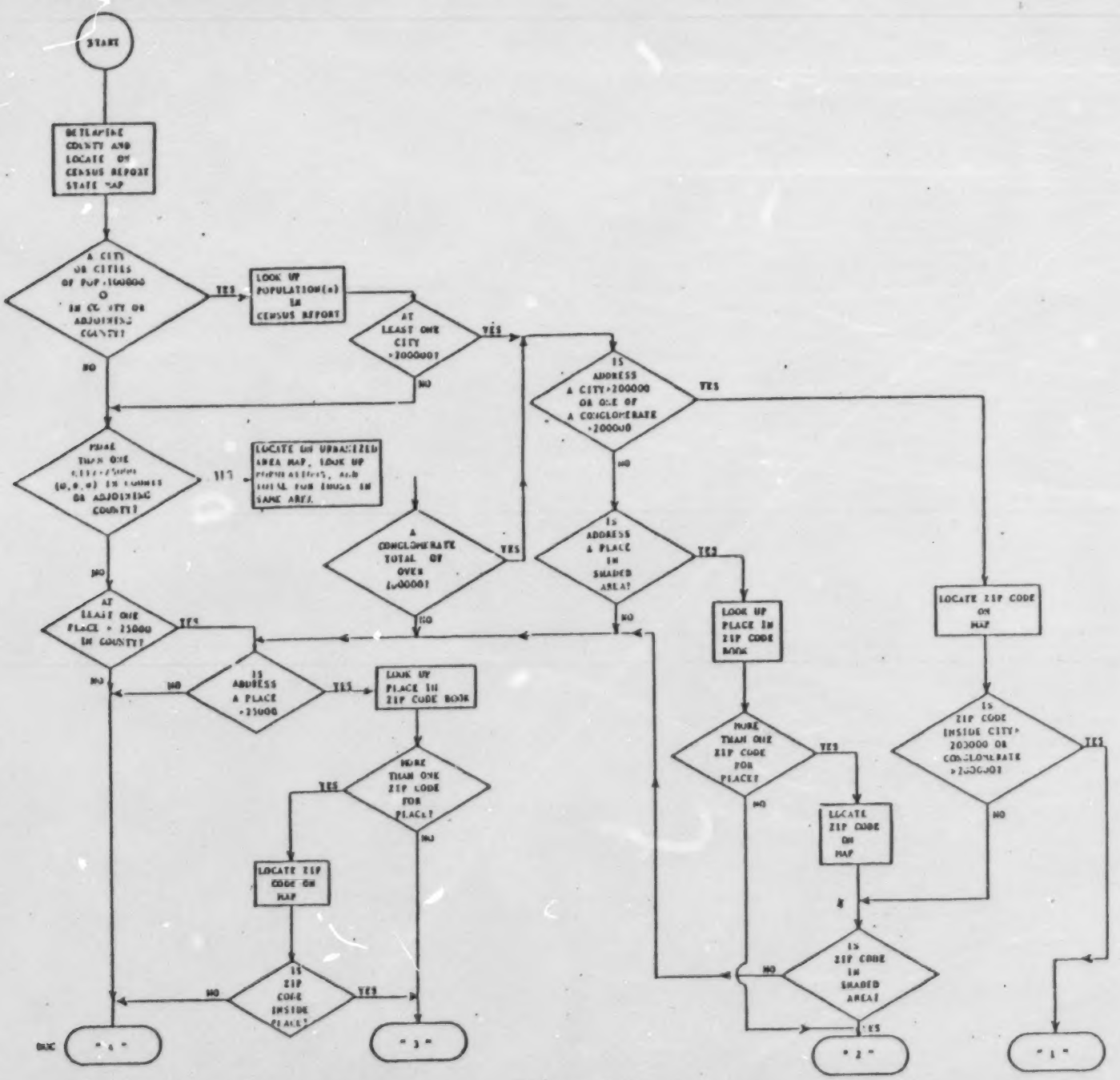
START
DETERMINE COUNTY AND LOCATE ON CENSUS REPORT STATE MAP
A CITY OR CITIES OF POP. 100000 OR IN CITY OR ADJOINING COUNTY?
YES
LOOK UP POPULATION(s) IN CENSUS REPORT
AT LEAST ONE CITY >200000?
YES
NO
IS ADDRESS A CITY >200000 OR ONE OF A CONGLOMERATE >200000
YES
NO
MORE THAN ONE CITY (0,0,0) IN COUNTY OR ADJOINING COUNTY?
YES
LOCATE ON URBANIZED AREA MAP, LOOK UP POPULATIONS, ADD TOTAL FOR TWOS IN SAME AREA
A CONGLOMERATE TOTAL OF OVER 100000?
YES
NO
IS ADDRESS A PLACE IN SHADED AREA?
YES
NO
LOCATE ZIP CODE ON MAP
AT LEAST ONE PLACE > 25000 IN COUNTY?
YES
NO
IS ADDRESS A PLACE >25000
YES
NO
LOOK UP PLACE IN ZIP CODE BOOK
LOOK UP PLACE IN ZIP CODE BOOK
MORE THAN ONE ZIP CODE FOR PLACE?
YES
NO
LOCATE ZIP CODE ON MAP
IS ZIP CODE INSIDE CITY> 200000 OR CONGLOMERATE >200000?
YES
NO
MORE THAN ONE ZIP CODE FOR PLACE?
YES
NO
LOCATE ZIP CODE ON MAP
IS ZIP CODE INSIDE PLACE?
NO
YES
IS ZIP CODE IN SHADED AREA?
NO
YES
"4"
"3"
"2"
"1"

Figure 2-1.

2.6.4.2 Assignment of DOC Codes Using Post Office Classifications. Using a computer printout of the names and addresses of the sample schools, the subsequent instructions were followed:

A. Using a computer printout list, the following steps were taken:

1. Lines were drawn to separate and identify each PSU;

2. The assigned procedure for each PSU was identified and recorded;

3. For each school not requiring the use of a ZIP code, the DOC code was recorded at the left of the page just before the PSU number.

B. For each school not assigned a DOC code,

1. The post office address (except names of SOC 1 central cities and other obvious ones) was located in the ZIP code directory;

2. If the post office address was a branch, e.g., "branch of Boston," then the appropriate branch name was recorded;

3. If the post office address was a station, e.g., "Boston station," then the appropriate station name was recorded;

4. If the post office address was a "regular" post office and

(a) If only one ZIP code was recorded, then a "1" was recorded;

(b) If more than one ZIP code was recorded, then a "$\geq$2" was recorded.

C. For each school not assigned a DOC code after step B, a location was determined as follows:

1. If the school had been marked "$\geq$2", using a ZIP code map, a check was made to see whether the school was located inside or outside the city limits of the place involved;

2. If the school had been marked "1", it was assumed that the school was located within the city limits of the place;

3. A DOC code was assigned on the basis of location:

(a) If the school was located inside a city or UA conglomerate with a population of 200,000 or over, then the school was assigned a DOC code of "1";

(b) If the school was located elsewhere in the UA shaded area of a BC, then the school was assigned a DOC code of "2";

(c) If the school was located in a place of 25,000 or over total population and not in a BC shaded area, then the school was assigned a DOC code of "3";

(d) If the school was not located in any of these places, then a DOC code of "4" was assigned.

The DOC codes were recorded on disk along with the school identification data.

2.6.5 Formation of STOC Codes by Computer

For the determination of STOC classifications on the basis of DOC codes and the requirements of TOC codes, another computer program was used which carried out the operations already outlined. For each of the TOC categories, the following procedure was used:

A. For each school the appropriate index was calculated from the occupational percentages.

B. For each school not meeting the other requirements for inclusion in the category, the value (-200) was substituted for the calculated index. The schools so treated were:

1. For TOC 1, all schools not in DOC 4, all schools having no farm worker parents, all schools having no students living in a rural area (total population less than 2,500), and all schools having any students living in places with populations greater than 10,000;

2. For TOC 2 or 3, all schools not in DOC 1 or 2. Because it was realized that very poor metropolitan type areas might be found outside the large cities themselves and, conversely, affluent areas could no doubt be found inside those cities as well as in their suburbs, no distinction was made between DOC 1 and DOC 2 in either case.

C. The schools were ordered on the basis of the resulting index values; sample sizes were accumulated downwards; and the cutoff point was set to separate the top 10 percent. Because ineligible schools had been

moved to the bottom of the list, all of the schools in the top 10 percent were eligible, and no substitutions were necessary.

Both the DOC and the STOC codes were recorded on disk and added to the weight record at the time the weights were calculated.

2.6.6 Results of DOC, TOC, and STOC Computations

2.6.6.1 Age Class 1, 9-Year-Olds. Table 2-42 presents weighted and unweighted percentages of Age Class 1 eligibles for STOC for all packages and provides comparisons of Year 11 percentages with those for Year 10. Unweighted percentages for STOC 1, 2, and 3 are not precisely 10 percent because STOC codes were determined for individual schools rather than for individual respondents. Thus within each school all of the respondents were assigned the same STOC code. It was not possible to reassign STOC codes within schools so that exactly 10 percent of the respondents would be categorized as each of STOC 1, 2 and 3. Weighted percentages for STOC 1 are lower than the unweighted percentages because of oversampling in rural areas; similarly, STOC 2 and STOC 4 weighted percentages are lower than unweighted percentages because low-income urban areas were oversampled; other weighted percentages are relatively high because of the resulting undersampling involved. The largest differences in both weighted and unweighted percentages for Years 10 and 11 are the decreases for STOC 4 and the increases for STOC 6 and STOC 7. These changes can be attributed in part to sampling differences in the first-stage sample units. The primary sample for assessment Years 07 through 10 was selected in Year 07. Primary units were assigned to years using a random procedure. The Year 10 sample received a relatively high proportion of primary units in cities of over 200,000 population and relatively low proportions in smaller cities and rural areas.

Table 2-42. Weighted and unweighted percentages of 9-year-olds in Year 11 by STOC for all packages.

| All packages | | | | | | |
|---|---|---|---|---|---|---|
| | Year 11 | | Year 10 | Year 11 | | Year 10 |
| STOC | Unweighted sum | Unweighted percent | Unweighted percent | Weighted sum | Weighted percent | Weighted percent |
| 1 | 2,924 | 10.0 | 10.0 | 321,457 | 9.6 | 8.7 |
| 2 | 2,899 | 10.0 | 10.0 | 204,856 | 6.1 | 8.6 |
| 3 | 2,893 | 9.9 | 10.1 | 345,564 | 10.4 | 10.1 |
| 4 | 2,693 | 9.3 | 16.9 | 267,692 | 8.0 | 13.1 |
| 5 | 2,871 | 9.9 | 9.9 | 364,651 | 10.9 | 10.5 |
| 6 | 3,004 | 10.3 | 9.4 | 466,956 | 14.0 | 11.8 |
| 7 | 11,819 | 40.6 | 33.7 | 1,368,391 | 41.0 | 37.2 |
| Total | 29,103 | 100.0 | 100.0 | 3,339,567 | 100.0 | 100.0 |

When a new primary sample was selected for Year 11 to Year 14, annual region-by-size-of-community control was maintained when allocation to the four years was carried out. Table 2-43 lists Year 11 weighted and unweighted percentages of Age Class 1 eligibles by STOC for each of the seven packages. Percentages by STOC for each of the four NAEP regions will be found in Table 2-60.

Table 2-44 presents Year 10 and 11 weighted and unweighted percentages of Age Class 1 eligibles by DOC for all packages. Changes from Year 10 again reflect the change in primary sample makeup; DOC 1 shows decreases from Year 10 to 11 and DOC 3 and 4 show increases.

Table 2-45 lists Year 11 weighted and unweighted percentages by DOC and package. Table 2-46 lists percentages of Year 11 Age Class 1 sample schools by DOC, TOC, and STOC classification. The 14.3 percent in STOC 1, which includes only 10.0 percent of the respondents, reflects the below-average size of schools in the extreme rural areas. In STOC 3, 5, and 7, school percentages smaller than respondent percentages indicate schools larger than average.

Table 2-47 shows comparisons of Year 10 and Year 11 weighted percentages of Age Class 1 eligibles cross-classified by STOC and DOC, using school weights. In each of the two years STOC 1 (extreme rural) was obtained entirely from DOC 4 by definition. The major part of STOC 2 (low metropolitan) came from DOC 1, with a lesser part from DOC 2. Conversely, the major portion of STOC 3 (high metropolitan) came from DOC 2 and a lesser portion from DOC 1. STOC 6 and DOC 3 are identical, and STOC 4, 5, and 7 are the nonextreme sectors of DOC 1, 2, and 4. Again, changes in percentages can be attributed to sample variabilities.

Table 2-43. Distribution of year 11 9-year-old estimated population and sample respondents by STOC and package

Package no. 1

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 393218. | 11.3 | 261. | 10.0 |
| 2 | 167654. | 4.8 | 294. | 11.3 |
| 3 | 344373. | 9.9 | 246. | 9.4 |
| 4 | 241238. | 6.9 | 235. | 9.0 |
| 5 | 321163. | 9.2 | 242. | 9.3 |
| 6 | 469680. | 13.4 | 279. | 10.7 |
| 7 | 1555409. | 44.5 | 1052. | 40.3 |
| Total | 3492735. | 100.0 | 2609. | 100.0 |

Package no. 2

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 248325. | 7.0 | 238. | 8.9 |
| 2 | 176581. | 5.0 | 243. | 9.1 |
| 3 | 478998. | 13.5 | 420. | 15.7 |
| 4 | 238522. | 6.7 | 182. | 6.8 |
| 5 | 300527. | 8.5 | 253. | 9.5 |
| 6 | 827233. | 23.3 | 386. | 14.4 |
| 7 | 1274803. | 36.0 | 951. | 35.6 |
| Total | 3544989. | 100.0 | 2673. | 100.0 |

Package no. 3

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 248383. | 8.1 | 268. | 10.3 |
| 2 | 162948. | 5.3 | 246. | 9.4 |
| 3 | 264039. | 8.7 | 180. | 6.9 |
| 4 | 197072. | 6.5 | 218. | 8.3 |
| 5 | 486823. | 16.0 | 368. | 14.1 |
| 6 | 328572. | 10.8 | 248. | 9.5 |
| 7 | 1357911. | 44.6 | 1085. | 41.5 |
| Total | 3045748. | 100.0 | 2613. | 100.0 |

Package no. 4

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 378415. | 10.2 | 323. | 12.2 |
| 2 | 197543. | 5.3 | 206. | 7.8 |
| 3 | 426264. | 11.5 | 313. | 11.8 |
| 4 | 312243. | 8.4 | 297. | 11.2 |
| 5 | 371343. | 10.0 | 249. | 9.4 |
| 6 | 561468. | 15.1 | 320. | 12.1 |
| 7 | 1467589. | 39.5 | 940. | 35.5 |
| Total | 3714865. | 100.0 | 2648. | 100.0 |

Table 2-43. (continued)

Package no. 5

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 163780. | 5.2 | 178. | 6.8 |
| 2 | 249324. | 7.9 | 231. | 8.8 |
| 3 | 409162. | 12.9 | 305. | 11.6 |
| 4 | 204113. | 6.4 | 207. | 7.9 |
| 5 | 398299. | 12.5 | 274. | 10.4 |
| 6 | 326260. | 10.3 | 234. | 8.9 |
| 7 | 1419136. | 44.8 | 1198. | 45.6 |
| Total | 3170074. | 100.0 | 2627. | 100.0 |

Package no. 6

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 286535. | 8.1 | 249. | 9.5 |
| 2 | 254305. | 7.2 | 288. | 11.0 |
| 3 | 389159. | 11.0 | 314. | 12.0 |
| 4 | 252495. | 7.1 | 205. | 7.8 |
| 5 | 251657. | 7.1 | 190. | 7.3 |
| 6 | 550627. | 15.6 | 296. | 11.3 |
| 7 | 1552023. | 43.9 | 1078. | 41.1 |
| Total | 3536801. | 100.0 | 2620. | 100.0 |

Package no. 7

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 225191. | 7.3 | 208. | 7.8 |
| 2 | 318730. | 10.3 | 349. | 13.1 |
| 3 | 326680. | 10.6 | 239. | 9.0 |
| 4 | 302710. | 9.8 | 285. | 10.7 |
| 5 | 270809. | 8.7 | 203. | 7.6 |
| 6 | 400843. | 13.0 | 251. | 9.4 |
| 7 | 1245926. | 40.3 | 1132. | 42.4 |
| Total | 3090889. | 100.0 | 2667. | 100.0 |

Package no. 8

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 449995. | 13.4 | 272. | 10.2 |
| 2 | 157869. | 4.7 | 230. | 8.6 |
| 3 | 317792. | 9.4 | 200. | 7.5 |
| 4 | 298333. | 8.8 | 332. | 12.4 |
| 5 | 474319. | 14.1 | 284. | 10.7 |
| 6 | 326549. | 9.7 | 207. | 7.8 |
| 7 | 1344300. | 39.9 | 1140. | 42.8 |
| Total | 3369257. | 100.0 | 2665. | 100.0 |

Table 2-43. (continued)

Package no. 5

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 163780. | 5.2 | 178. | 6.8 |
| 2 | 249324. | 7.9 | 231. | 8.8 |
| 3 | 409162. | 12.9 | 305. | 11.6 |
| 4 | 204113. | 6.4 | 207. | 7.9 |
| 5 | 398299. | 12.5 | 274. | 10.4 |
| 6 | 326260. | 10.3 | 234. | 8.9 |
| 7 | 1419136. | 44.8 | 1198. | 45.6 |
| Total | 3170074. | 100.0 | 2627. | 100.0 |

Package no. 6

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 286535. | 8.1 | 249. | 9.5 |
| 2 | 254305. | 7.2 | 288. | 11.0 |
| 3 | 389159. | 11.0 | 314. | 12.0 |
| 4 | 252495. | 7.1 | 205. | 7.8 |
| 5 | 251657. | 7.1 | 190. | 7.3 |
| 6 | 550627. | 15.6 | 296. | 11.3 |
| 7 | 1552023. | 43.9 | 1078. | 41.1 |
| Total | 3536801. | 100.0 | 2620. | 100.0 |

Package no. 7

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 225191. | 7.3 | 208. | 7.8 |
| 2 | 318730. | 10.3 | 349. | 13.1 |
| 3 | 326680. | 10.6 | 239. | 9.0 |
| 4 | 302710. | 9.8 | 285. | 10.7 |
| 5 | 270809. | 8.7 | 203. | 7.6 |
| 6 | 400843. | 13.0 | 251. | 9.4 |
| 7 | 1245926. | 40.3 | 1132. | 42.4 |
| Total | 3090889. | 100.0 | 2667. | 100.0 |

Package no. 8

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 449995. | 13.4 | 272. | 10.2 |
| 2 | 157869. | 4.7 | 230. | 8.6 |
| 3 | 317792. | 9.4 | 200. | 7.5 |
| 4 | 298333. | 8.8 | 332. | 12.4 |
| 5 | 474319. | 14.1 | 284. | 10.7 |
| 6 | 326649. | 9.7 | 207. | 7.8 |
| 7 | 1344300. | 39.9 | 1140. | 42.8 |
| Total | 3369257. | 100.0 | 2665. | 100.0 |

Table 2-43. (continued)

Package no. 9

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 460656. | 13.1 | 353. | 13.3 |
| 2 | 141347. | 4.0 | 203. | 7.7 |
| 3 | 237812. | 6.8 | 250. | 9.4 |
| 4 | 364293. | 10.3 | 278. | 10.5 |
| 5 | 409778. | 11.7 | 260. | 9.8 |
| 6 | 563331. | 16.0 | 253. | 9.5 |
| 7 | 1339539. | 38.1 | 1053. | 39.7 |
| Total | 3516756. | 100.0 | 2650. | 100.0 |

Package no. 10

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 401533. | 13.0 | 343. | 12.6 |
| 2 | 191972. | 6.2 | 279. | 10.3 |
| 3 | 358477. | 11.6 | 221. | 8.1 |
| 4 | 287806. | 9.3 | 254. | 9.4 |
| 5 | 355279. | 11.5 | 322. | 11.9 |
| 6 | 437388. | 14.2 | 290. | 10.7 |
| 7 | 1054730. | 34.2 | 1002. | 37.0 |
| Total | 3087185. | 100.0 | 2711. | 100.0 |

Package no. 11

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 279992. | 8.9 | 231. | 8.8 |
| 2 | 235142. | 7.4 | 330. | 12.6 |
| 3 | 248442. | 7.8 | 205. | 7.8 |
| 4 | 245788. | 7.8 | 200. | 7.6 |
| 5 | 371167. | 11.7 | 226. | 8.6 |
| 6 | 344467. | 10.9 | 240. | 9.2 |
| 7 | 1440935. | 45.5 | 1188. | 45.4 |
| Total | 3165933. | 100.0 | 2620. | 100.0 |

All packages

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 321457. | 9.6 | 2924. | 10.0 |
| 2 | 204856. | 6.1 | 2899. | 10.0 |
| 3 | 345564. | 10.4 | 2893. | 9.9 |
| 4 | 267692. | 8.0 | 2693. | 9.3 |
| 5 | 364651. | 10.9 | 2871. | 9.9 |
| 6 | 466986. | 14.0 | 3004. | 10.3 |
| 7 | 1368391. | 41.0 | 11819. | 40.6 |
| Total | 3339567. | 100.0 | 29103. | 100.0 |

Table 2-44. Weighted and unweighted percentages of 9-year-olds in Year 11 by DOC for all packages.

| All packages | | | | | | |
|---|---|---|---|---|---|---|
| | Year 11 | | Year 10 | Year 11 | | Year 10 |
| DOC | Unweighted sum | Unweighted percent | Unweighted percent | Weighted sum | Weighted percent | Weighted percent |
| 1 | 6,403 | 22.0 | 29.0 | 582,615 | 17.4 | 23.5 |
| 2 | 4,953 | 17.0 | 11.8 | 600,148 | 18.0 | 18.8 |
| 3 | 3,004 | 10.3 | 9.4 | 466,957 | 14.0 | 11.8 |
| 4 | 14,743 | 50.7 | 43.8 | 1,689,847 | 50.6 | 45.9 |
| Total | 29,103 | 100.0 | 100.0 | 3,339,567 | 100.0 | 100.0 |

Table 2-45. Distribution of year 11 9-year-old estimated population and sample respondents by DOC and package

Package no. 1

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 467300. | 13.4 | 578. | 22.2 |
| 2 | 607128. | 17.4 | 439. | 16.8 |
| 3 | 469680. | 13.4 | 279. | 10.7 |
| 4 | 1948627. | 55.8 | 1313. | 50.3 |
| Total | 3492735. | 100.0 | 2609. | 100.0 |

Package no. 2

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 619920. | 17.5 | 602. | 22.5 |
| 2 | 574708. | 16.2 | 496. | 18.5 |
| 3 | 827234. | 23.3 | 386. | 14.4 |
| 4 | 1523127. | 43.0 | 1189. | 44.5 |
| Total | 3544989. | 100.0 | 2673. | 100.0 |

Package no. 3

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 493107. | 16.2 | 516. | 19.7 |
| 2 | 617775. | 20.3 | 496. | 19.0 |
| 3 | 328572. | 10.8 | 248. | 9.5 |
| 4 | 1606294. | 52.7 | 1353. | 51.8 |
| Total | 3045748. | 100.0 | 2613. | 100.0 |

Package no. 4

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 660353. | 17.8 | 592. | 22.3 |
| 2 | 647041. | 17.4 | 473. | 17.9 |
| 3 | 561468. | 15.1 | 320. | 12.1 |
| 4 | 1846003. | 49.7 | 1263. | 47.7 |
| Total | 3714865. | 100.0 | 2648. | 100.0 |

Package no. 5

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 565255. | 17.8 | 485. | 18.5 |
| 2 | 695643. | 22.0 | 532. | 20.2 |
| 3 | 326261. | 10.3 | 234. | 8.9 |
| 4 | 1582915. | 49.9 | 1376. | 52.4 |
| Total | 3170074. | 100.0 | 2627. | 100.0 |

Table 2-45. (continued)

Package no. 6

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 571821. | 16.2 | 547. | 20.9 |
| 2 | 575795. | 16.3 | 450. | 17.2 |
| 3 | 550627. | 15.5 | 296. | 11.3 |
| 4 | 1838558. | 52.0 | 1327. | 50.6 |
| Total | 3536801. | 100.0 | 2620. | 100.0 |

Package no. 7

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 725771. | 23.5 | 706. | 26.5 |
| 2 | 493158. | 15.9 | 370. | 13.9 |
| 3 | 400843. | 13.0 | 251. | 9.4 |
| 4 | 1471117. | 47.6 | 1340. | 50.2 |
| Total | 3090889. | 100.0 | 2667. | 100.0 |

Package no. 8

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 593874. | 17.6 | 637. | 23.9 |
| 2 | 654439. | 19.4 | 409. | 15.3 |
| 3 | 326649. | 9.7 | 207. | 7.8 |
| 4 | 1794295. | 53.3 | 1412. | 53.0 |
| Total | 3369257. | 100.0 | 2665. | 100.0 |

Package no. 9

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 536779. | 15.3 | 550. | 20.8 |
| 2 | 616451. | 17.5 | 441. | 16.6 |
| 3 | 563332. | 16.0 | 253. | 9.5 |
| 4 | 1800194. | 51.2 | 1406. | 53.1 |
| Total | 3516756. | 100.0 | 2650. | 100.0 |

Package no. 10

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 651256. | 21.1 | 630. | 23.2 |
| 2 | 542278. | 17.6 | 446. | 16.5 |
| 3 | 437388. | 14.1 | 290. | 10.7 |
| 4 | 1456263. | 47.2 | 1345. | 49.6 |
| Total | 3087185. | 100.0 | 2711. | 100.0 |

Table 2-45. (continued)

Package no. 11

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 523333. | 16.5 | 560. | 21.4 |
| 2 | 577206. | 18.2 | 401. | 15.3 |
| 3 | 344467. | 10.9 | 240. | 9.1 |
| 4 | 1720927. | 54.4 | 1419. | 54.2 |
| Total | 3165933. | 100.0 | 2620. | 100.0 |

All packages

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 582515. | 17.4 | 6403. | 22.0 |
| 2 | 600148. | 18.0 | 4953. | 17.0 |
| 3 | 466957. | 14.0 | 3004. | 10.3 |
| 4 | 1689847. | 50.6 | 14743. | 50.7 |
| Total | 3339567. | 100.0 | 29103. | 100.0 |

Table 2-46. Distribution of year 11 9-year-old sample schools by DOC, TOC, anc STOC codes

| | DOC | | TOC | | STOC | |
|---|---|---|---|---|---|---|
| Code | No. | Pct. | No. | Pct. | No. | Pct. |
| 1 | 119 | 21.2 | 80 | 14.3 | 80 | 14.3 |
| 2 | 82 | 14.6 | 52 | 9.3 | 52 | 9.3 |
| 3 | 63 | 11.2 | 50 | 8.9 | 50 | 8.9 |
| 4 | 297 | 53.0 | 379 | 67.5 | 52 | 9.2 |
| 5 | X | X | X | X | 47 | 8.4 |
| 6 | X | X | X | X | 63 | 11.2 |
| 7 | X | X | X | X | 217 | 38.7 |
| Total | 561 | 100.0 | 561 | 100.0 | 561 | 100.0 |

Table 2-47. Weighted percentages of 9-year-olds by STOC and DOC

Year 11

| DOC | STOC | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| 1 | 0.0 | 5.3 | 4.1 | 8.0 | 0.0 | 0.0 | 0.0 | 17.4 |
| 2 | 0.0 | 0.8 | 6.3 | 0.0 | 10.9 | 0.0 | 0.0 | 18.0 |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 14.0 | 0.0 | 14.0 |
| 4 | 9.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 41.0 | 50.6 |
| Total | 9.6 | 6.1 | 10.4 | 8.0 | 10.9 | 14.0 | 41.0 | 100.0 |

Year 10

| DOC | STOC | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| 1 | 0.0 | 6.8 | 3.6 | 13.1 | 0.0 | 0.0 | 0.0 | 23.5 |
| 2 | 0.0 | 1.8 | 6.5 | 0.0 | 10.5 | 0.0 | 0.0 | 18.8 |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.8 | 0.0 | 11.8 |
| 4 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 37.2 | 45.9 |
| Total | 8.7 | 8.6 | 10.1 | 13.1 | 10.5 | 11.8 | 37.2 | 100.0 |

2.6.6.2 Age Class 2, 13-Year-Olds. Table 2-48 presents Year 10 and 11 weighted and unweighted percentages of Age Class 2 eligibles by STOC for all packages. As in Age Class 1, there have been decreases in STOC 4 percentages and increases in those for STOC 6 and 7. In this case there has also been a decrease for STOC 5. Weighted and unweighted percentages by package are presented in table 2-49. Percentages for each of the four NAEP regions are shown in table 2-60.

Table 2-50 presents Year 10 and 11 weighted and unweighted percentages of Age Class 2 eligibles by DOC for all packages. Changes from Year 10 again reflect the change in primary sample makeup; DOC 1 and 2 show decreases from Year 10 to 11 and DOC 3 and 4 show increases.

Table 2-51 lists Year 11 weighted and unweighted percentages by DOC and package. Table 2-52 presents Year 11 number of Age Class 2 sample schools by DOC, TOC, and STOC. Table 2-53 shows comparisons of Year 09 and 10 Age Class 2 weighted percentages of respondents by STOC and DOC using school weights. Again the major part of STOC 2 for each year was obtained from DOC 1.

2.6.6.3 Age Class 3, 17-Year-Olds. Table 2-54 provides Year 10 and 11 comparisons for weighted and unweighted percentages of Age Class 3 eligibles by STOC for all packages. As with 9- and 13-year-olds, decreases occurred in percentages for STOC 4 and increases for STOC 6 and 7. The change is again due to the random allocation of the sample for Year 10. Table 2-55 gives Year 11 weighted and unweighted percentages by STOC for each of the Age Class 3 packages. Percentages for all packages by STOC for each region will be found in table 2-64.

Table 2-56 presents comparisons of Year 10 and 11 weighted and unweighted percentages of Age Class 3 eligibles by DOC for all packages.

Table 2-48. Weighted and unweighted percentages of 13-year-olds in Year 11 by STOC for all packages.

| All packages | | | | | | |
|---|---|---|---|---|---|---|
| | Year 11 | | Year 10 | Year 11 | | Year 10 |
| STOC | Unweighted sum | Unweighted percent | Unweighted percent | Weighted sum | Weighted percent | Weighted percent |
| 1 | 4,116 | 9.9 | 10.0 | 314,872 | 9.5 | 9.0 |
| 2 | 4,164 | 10.0 | 10.1 | 275,751 | 8.3 | 8.2 |
| 3 | 4,103 | 9.9 | 9.9 | 308,324 | 9.3 | 10.6 |
| 4 | 2,894 | 7.0 | 15.8 | 194,737 | 5.8 | 14.5 |
| 5 | 4,758 | 11.4 | 13.3 | 402,613 | 12.1 | 13.6 |
| 6 | 7,084 | 17.0 | 10.3 | 644,900 | 19.4 | 11.6 |
| 7 | 14,455 | 34.8 | 30.6 | 1,186,246 | 35.6 | 32.5 |
| Total | 41,574 | 100.0 | 100.0 | 3,327,443 | 100.0 | 100.0 |

Table 2-49. Distribution of year 11 13-year-old estimated population and sample respondents by STOC and package

Package no. 1

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 395868. | 11.7 | 310. | 11.1 |
| 2 | 399339. | 11.8 | 335. | 12.0 |
| 3 | 301200. | 8.9 | 288. | 10.3 |
| 4 | 201377. | 5.9 | 175. | 6.3 |
| 5 | 381314. | 11.2 | 288. | 10.4 |
| 6 | 641546. | 18.9 | 449. | 16.1 |
| 7 | 1069758. | 31.6 | 941. | 33.8 |
| Total | 3390402. | 100.0 | 2786. | 100.0 |

Package no. 2

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 302746. | 8.7 | 220. | 7.9 |
| 2 | 319242. | 9.2 | 326. | 11.7 |
| 3 | 248235. | 7.2 | 216. | 7.8 |
| 4 | 229326. | 6.6 | 198. | 7.1 |
| 5 | 438169. | 12.7 | 299. | 10.7 |
| 6 | 532377. | 15.4 | 415. | 14.9 |
| 7 | 1391325. | 40.2 | 1111. | 39.9 |
| Total | 3461420. | 100.0 | 2785. | 100.0 |

Package no. 3

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 216453. | 6.7 | 217. | 7.8 |
| 2 | 227835. | 7.0 | 293. | 10.6 |
| 3 | 376803. | 11.6 | 316. | 11.4 |
| 4 | 150006. | 4.6 | 179. | 6.5 |
| 5 | 379757. | 11.7 | 251. | 9.1 |
| 6 | 707497. | 21.7 | 537. | 19.4 |
| 7 | 1194834. | 36.7 | 973. | 35.2 |
| Total | 3253185. | 100.0 | 2766. | 100.0 |

Package no. 4

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 315412. | 9.7 | 263. | 9.5 |
| 2 | 245326. | 7.5 | 243. | 8.8 |
| 3 | 337501. | 10.3 | 332. | 12.0 |
| 4 | 238781. | 7.3 | 223. | 8.1 |
| 5 | 354801. | 10.9 | 279. | 10.1 |
| 6 | 593113. | 18.2 | 432. | 15.7 |
| 7 | 1175561. | 36.1 | 987. | 35.8 |
| Total | 3260495. | 100.0 | 2759. | 100.0 |

Table 2-49. (continued)

Package no. 5

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 290375. | 8.9 | 304. | 11.2 |
| 2 | 330127. | 10.1 | 301. | 11.1 |
| 3 | 314545. | 9.6 | 242. | 8.9 |
| 4 | 88367. | 2.7 | 115. | 4.2 |
| 5 | 420437. | 12.8 | 338. | 12.5 |
| 6 | 692192. | 21.1 | 480. | 17.7 |
| 7 | 1138804. | 34.8 | 932. | 34.4 |
| Total | 3274847. | 100.0 | 2712. | 100.0 |

Package no. 6

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 212821. | 6.7 | 161. | 5.8 |
| 2 | 224956. | 7.1 | 226. | 8.2 |
| 3 | 306812. | 9.6 | 300. | 10.9 |
| 4 | 137398. | 4.3 | 171. | 6.2 |
| 5 | 376960. | 11.8 | 323. | 11.7 |
| 6 | 651887. | 20.5 | 488. | 17.7 |
| 7 | 1270883. | 40.0 | 1091. | 39.5 |
| Total | 3181717. | 100.0 | 2760. | 100.0 |

Package no. 7

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 349549. | 10.5 | 316. | 11.6 |
| 2 | 192259. | 5.8 | 249. | 9.1 |
| 3 | 325947. | 9.8 | 233. | 8.5 |
| 4 | 249158. | 7.5 | 229. | 8.4 |
| 5 | 389195. | 11.6 | 339. | 12.4 |
| 6 | 622329. | 18.6 | 425. | 15.5 |
| 7 | 1207273. | 36.2 | 943. | 34.5 |
| Total | 3335710. | 100.0 | 2734. | 100.0 |

Package no. 8

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 341675. | 11.2 | 334. | 12.3 |
| 2 | 276112. | 9.0 | 266. | 9.8 |
| 3 | 220035. | 7.2 | 241. | 8.9 |
| 4 | 179303. | 5.9 | 213. | 7.8 |
| 5 | 376373. | 12.3 | 287. | 10.5 |
| 6 | 564426. | 18.4 | 431. | 15.9 |
| 7 | 1102984. | 36.0 | 947. | 34.8 |
| Total | 3060908. | 100.0 | 2719. | 100.0 |

Table 2-49. (continued)

Package no. 9

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 346315. | 10.3 | 299. | 10.5 |
| 2 | 258705. | 7.7 | 306. | 10.7 |
| 3 | 374987. | 11.1 | 310. | 10.8 |
| 4 | 217222. | 6.4 | 196. | 6.9 |
| 5 | 332126. | 9.8 | 307. | 10.7 |
| 6 | 626769. | 18.5 | 497. | 17.4 |
| 7 | 1224692. | 36.2 | 942. | 33.0 |
| Total | 3380816. | 100.0 | 2857. | 100.0 |

Package no. 10

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 299065. | 8.7 | 234. | 8.5 |
| 2 | 158072. | 4.6 | 174. | 6.4 |
| 3 | 235336. | 6.9 | 205. | 7.5 |
| 4 | 195521. | 5.7 | 194. | 7.1 |
| 5 | 561923. | 16.4 | 450. | 16.5 |
| 6 | 597715. | 17.5 | 436. | 16.0 |
| 7 | 1377415. | 40.2 | 1038. | 38.0 |
| Total | 3425047. | 100.0 | 2731. | 100.0 |

Package no. 11

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 307815. | 8.9 | 257. | 9.4 |
| 2 | 307148. | 8.9 | 270. | 9.8 |
| 3 | 324452. | 9.4 | 292. | 10.7 |
| 4 | 200021. | 5.8 | 185. | 6.7 |
| 5 | 414883. | 12.0 | 340. | 12.4 |
| 6 | 622560. | 18.0 | 432. | 15.8 |
| 7 | 1275327. | 37.0 | 966. | 35.2 |
| Total | 3452206. | 100.0 | 2742. | 100.0 |

Package no. 12

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 271160. | 8.1 | 233. | 8.5 |
| 2 | 279600. | 8.4 | 305. | 11.1 |
| 3 | 279584. | 8.4 | 210. | 7.6 |
| 4 | 149243. | 4.5 | 144. | 5.2 |
| 5 | 534672. | 16.0 | 407. | 14.8 |
| 6 | 690373. | 20.6 | 517. | 18.8 |
| 7 | 1137378. | 34.0 | 933. | 34.0 |
| Total | 3342010. | 100.0 | 2749. | 100.0 |

Table 2-49. (continued)

Package no. 13

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 332086. | 9.9 | 334. | 12.0 |
| 2 | 308391. | 9.2 | 261. | 9.3 |
| 3 | 353083. | 10.5 | 339. | 12.2 |
| 4 | 253768. | 7.5 | 242. | 8.7 |
| 5 | 348381. | 10.3 | 262. | 9.4 |
| 6 | 672674. | 20.0 | 481. | 17.3 |
| 7 | 1099492. | 32.6 | 867. | 31.1 |
| Total | 3367875. | 100.0 | 2786. | 100.0 |

Package no. 14

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 377762. | 11.2 | 319. | 11.5 |
| 2 | 304366. | 9.0 | 311. | 11.2 |
| 3 | 325630. | 9.6 | 303. | 10.9 |
| 4 | 220235. | 6.5 | 186. | 6.7 |
| 5 | 335759. | 10.0 | 282. | 10.2 |
| 6 | 693524. | 20.6 | 488. | 17.6 |
| 7 | 1115448. | 33.1 | 883. | 31.9 |
| Total | 3372724. | 100.0 | 2772. | 100.0 |

Package no. 15

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 363975. | 10.8 | 315. | 10.8 |
| 2 | 304791. | 9.1 | 298. | 10.2 |
| 3 | 300702. | 9.0 | 276. | 9.5 |
| 4 | 211329. | 6.3 | 244. | 8.4 |
| 5 | 394448. | 11.8 | 306. | 10.5 |
| 6 | 764517. | 22.8 | 576. | 19.7 |
| 7 | 1012518. | 30.2 | 901. | 30.9 |
| Total | 3352280. | 100.0 | 2916. | 100.0 |

All packages

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 314872. | 9.5 | 4116. | 9.9 |
| 2 | 275751. | 8.3 | 4164. | 10.0 |
| 3 | 308324. | 9.3 | 4103. | 9.9 |
| 4 | 194737. | 5.8 | 2894. | 7.0 |
| 5 | 402613. | 12.1 | 4758. | 11.4 |
| 6 | 644900. | 19.4 | 7084. | 17.0 |
| 7 | 1186246. | 35.6 | 14455. | 34.8 |
| Total | 3327443. | 100.0 | 41574. | 100.0 |

Table 2-50. Weighted and unweighted percentages of 13-year-olds in Year 11 by DOC for all packages.

| All packages | | | | | | |
|---|---|---|---|---|---|---|
| | Year 11 | | Year 10 | Year 11 | | Year 10 |
| DOC | Unweighted sum | Unweighted percent | Unweighted percent | Weighted sum | Weighted percent | Weighted percent |
| 1 | 7,645 | 18.4 | 28.0 | 511,133 | 15.4 | 24.2 |
| 2 | 8,274 | 19.9 | 21.1 | 670,292 | 20.1 | 22.7 |
| 3 | 7,084 | 17.0 | 10.4 | 644,900 | 19.4 | 11.6 |
| 4 | 18,571 | 44.7 | 40.5 | 1,501,118 | 45.1 | 41.5 |
| Total | 41,574 | 100.0 | 100.0 | 3,327,443 | 100.0 | 100.0 |

Table 2-51. Distribution of year 11 13-year-old estimated population and sample respondents by DOC and package

Package no. 1

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 603192. | 17.8 | 565. | 20.3 |
| 2 | 660038. | 20.1 | 521. | 18.7 |
| 3 | 641546. | 18.9 | 449. | 16.1 |
| 4 | 1465626. | 43.2 | 1251. | 44.9 |
| Total | 3390402. | 100.0 | 2786. | 100.0 |

Package no. 2

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 619095. | 17.9 | 558. | 20.0 |
| 2 | 615877. | 17.8 | 481. | 17.3 |
| 3 | 532377. | 15.4 | 415. | 14.9 |
| 4 | 1694071. | 48.9 | 1331. | 47.8 |
| Total | 3461420. | 100.0 | 2785. | 100.0 |

Package no. 3

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 430096. | 13.2 | 509. | 18.4 |
| 2 | 704304. | 21.6 | 530. | 19.2 |
| 3 | 707498. | 21.8 | 537. | 19.4 |
| 4 | 1411287. | 43.4 | 1190. | 43.0 |
| Total | 3253185. | 100.0 | 2766. | 100.0 |

Package no. 4

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 464901. | 14.3 | 470. | 17.0 |
| 2 | 711508. | 21.8 | 607. | 22.0 |
| 3 | 593112. | 18.2 | 432. | 15.7 |
| 4 | 1490974. | 45.7 | 1250. | 45.3 |
| Total | 3260495. | 100.0 | 2759. | 100.0 |

Package no. 5

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 380723. | 11.6 | 447. | 16.5 |
| 2 | 772753. | 23.6 | 549. | 20.2 |
| 3 | 692192. | 21.1 | 480. | 17.7 |
| 4 | 1429179. | 43.7 | 1236. | 45.6 |
| Total | 3274847. | 100.0 | 2712. | 100.0 |

Table 2-51. (continued)

Package no. 6

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 412014. | 13.0 | 442. | 16.0 |
| 2 | 634112. | 19.9 | 578. | 20.9 |
| 3 | 651887. | 20.5 | 488. | 17.7 |
| 4 | 1483704. | 46.6 | 1252. | 45.4 |
| Total | 3181717. | 100.0 | 2760. | 100.0 |

Package no. 7

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 526603. | 15.8 | 505. | 18.5 |
| 2 | 629956. | 18.9 | 545. | 19.9 |
| 3 | 622329. | 18.6 | 425. | 15.5 |
| 4 | 1556822. | 46.7 | 1259. | 46.1 |
| Total | 3335710. | 100.0 | 2734. | 100.0 |

Package no. 8

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 483692. | 15.8 | 535. | 19.7 |
| 2 | 568130. | 18.6 | 472. | 17.3 |
| 3 | 564426. | 18.4 | 431. | 15.9 |
| 4 | 1444660. | 47.2 | 1281. | 47.1 |
| Total | 3060908. | 100.0 | 2719. | 100.0 |

Package no. 9

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 592776. | 17.5 | 557. | 19.5 |
| 2 | 590264. | 17.5 | 562. | 19.7 |
| 3 | 626769. | 18.5 | 497. | 17.4 |
| 4 | 1571007. | 46.5 | 1241. | 43.4 |
| Total | 3380816. | 100.0 | 2857. | 100.0 |

Package no. 10

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 382116. | 11.2 | 384. | 14.1 |
| 2 | 768736. | 22.4 | 639. | 23.4 |
| 3 | 537716. | 17.5 | 436. | 15.9 |
| 4 | 1676479. | 48.9 | 1272. | 46.6 |
| Total | 3425047. | 100.0 | 2731. | 100.0 |

Table 2-51. (continued)

Package no. 11

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 468722. | 13.6 | 475. | 17.3 |
| 2 | 777782. | 22.5 | 612. | 22.3 |
| 3 | 622560. | 18.0 | 432. | 15.8 |
| 4 | 1583142. | 45.9 | 1223. | 44.6 |
| Total | 3452206. | 100.0 | 2742. | 100.0 |

Package no. 12

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 431929. | 12.9 | 429. | 15.6 |
| 2 | 811170. | 24.3 | 637. | 23.2 |
| 3 | 690373. | 20.7 | 517. | 18.8 |
| 4 | 1408538. | 42.1 | 1166. | 42.4 |
| Total | 3342010. | 100.0 | 2749. | 100.0 |

Package no. 13

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 649999. | 19.3 | 587. | 21.1 |
| 2 | 613625. | 18.2 | 517. | 18.5 |
| 3 | 672674. | 20.0 | 481. | 17.3 |
| 4 | 1431577. | 42.5 | 1201. | 43.1 |
| Total | 3367875. | 100.0 | 2786. | 100.0 |

Package no. 14

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 637899. | 18.9 | 599. | 21.6 |
| 2 | 548091. | 16.2 | 483. | 17.4 |
| 3 | 693524. | 20.6 | 488. | 17.6 |
| 4 | 1493210. | 44.3 | 1202. | 43.4 |
| Total | 3372724. | 100.0 | 2772. | 100.0 |

Package no. 15

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 583237. | 17.4 | 583. | 20.0 |
| 2 | 628033. | 18.7 | 541. | 18.5 |
| 3 | 764517. | 22.8 | 576. | 19.8 |
| 4 | 1376493. | 41.1 | 1216. | 41.7 |
| Total | 3352280. | 100.0 | 2916. | 100.0 |

Table 2-51. (continued)

All packages

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 511133. | 15.4 | 7645. | 18.4 |
| 2 | 670292. | 20.1 | 8274. | 19.9 |
| 3 | 644900. | 19.4 | 7084. | 17.0 |
| 4 | 1501118. | 45.1 | 18571. | 44.7 |
| Total | 3327443. | 100.0 | 41574. | 100.0 |

Table 2-52. Distribution of year 11 13-year-old sample schools by DOC, TOC, anc STOC codes

| | DOC | | TOC | | STOC | |
|---|---|---|---|---|---|---|
| Code | No. | Pct. | No. | Pct. | No. | Pct. |
| 1 | 120 | 22.3 | 86 | 16.0 | 86 | 16.0 |
| 2 | 81 | 15.1 | 59 | 11.0 | 59 | 11.0 |
| 3 | 74 | 13.8 | 53 | 9.9 | 53 | 9.8 |
| 4 | 262 | 48.8 | 339 | 63.1 | 44 | 8.2 |
| 5 | X | X | X | X | 45 | 8.4 |
| 6 | X | X | X | X | 74 | 13.8 |
| 7 | X | X | X | X | 176 | 32.8 |
| Total | 537 | 100.0 | 537 | 100.0 | 537 | 100.0 |

Table 2-53. Weighted percentages of 13-year-olds by STOC and DOC

Year 11

| DOC | STOC | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| 1 | 0.0 | 6.3 | 3.4 | 5.9 | 0.0 | 0.0 | 0.0 | 15.6 |
| 2 | 0.0 | 2.1 | 5.7 | 0.0 | 12.0 | 0.0 | 0.0 | 19.8 |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 19.4 | 0.0 | 19.4 |
| 4 | 9.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 35.7 | 45.2 |
| Total | 9.5 | 8.4 | 9.1 | 5.9 | 12.0 | 19.4 | 35.7 | 100.0 |

Year 10

| DOC | STOC | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| 1 | 0.0 | 5.8 | 3.9 | 14.4 | 0.0 | 0.0 | 0.0 | 24.1 |
| 2 | 0.0 | 2.3 | 6.8 | 0.0 | 13.7 | 0.0 | 0.0 | 22.8 |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.6 | 0.0 | 11.6 |
| 4 | 8.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 32.6 | 41.5 |
| Total | 8.9 | 8.1 | 10.7 | 14.4 | 13.7 | 11.6 | 32.6 | 100.0 |

Table 2-54. Weighted and unweighted percentages of 17-year-olds in Year 11 by STOC for all packages.

| All packages | | | | | | |
|---|---|---|---|---|---|---|
| | Year 11 | | Year 10 | Year 11 | | Year 10 |
| STOC | Unweighted sum | Unweighted percent | Unweighted percent | Weighted sum | Weighted percent | Weighted percent |
| 1 | 3,452 | 9.6 | 9.5 | 253,550 | 7.9 | 7.8 |
| 2 | 3,896 | 10.8 | 11.1 | 279,427 | 8.6 | 10.7 |
| 3 | 3,641 | 10.1 | 10.0 | 388,867 | 12.0 | 9.5 |
| 4 | 2,368 | 6.5 | 13.2 | 141,350 | 4.4 | 11.0 |
| 5 | 3,686 | 10.2 | 13.6 | 396,121 | 11.4 | 16.3 |
| 6 | 6,730 | 18.6 | 10.1 | 635,086 | 19.6 | 12.0 |
| 7 | 12,336 | 34.2 | 32.5 | 1,167,197 | 36.1 | 32.7 |
| Total | 36,109 | 100.0 | 100.0 | 3,254,598 | 100.0 | 100.0 |

Table 2--35. Distribution of year 11 17-year-old estimated population and sample respondents by STOC and package

Package no. 1

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 327816. | 10.1 | 309. | 12.0 |
| 2 | 192535. | 5.9 | 216. | 8.4 |
| 3 | 454187. | 14.0 | 231. | 8.9 |
| 4 | 256978. | 7.9 | 278. | 10.7 |
| 5 | 307647. | 9.5 | 252. | 9.8 |
| 6 | 619389. | 19.1 | 473. | 18.3 |
| 7 | 1083125. | 33.4 | 825. | 31.9 |
| Total | 3241778. | 100.0 | 2584. | 100.0 |

Package no. 2

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 227854. | 6.9 | 220. | 8.6 |
| 2 | 205422. | 6.3 | 221. | 8.7 |
| 3 | 563269. | 17.2 | 287. | 11.3 |
| 4 | 111794. | 3.4 | 156. | 6.1 |
| 5 | 367763. | 11.2 | 253. | 10.0 |
| 6 | 620153. | 18.9 | 448. | 17.6 |
| 7 | 1182959. | 36.1 | 960. | 37.7 |
| Total | 3279214. | 100.0 | 2545. | 100.0 |

Package no. 3

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 309492. | 9.2 | 279. | 10.8 |
| 2 | 303804. | 9.0 | 319. | 12.4 |
| 3 | 554845. | 16.5 | 298. | 11.5 |
| 4 | 150770. | 4.5 | 159. | 6.2 |
| 5 | 277991. | 8.2 | 202. | 7.8 |
| 6 | 551035. | 16.3 | 429. | 16.6 |
| 7 | 1225825. | 36.3 | 894. | 34.7 |
| Total | 3373762. | 100.0 | 2580. | 100.0 |

Package no. 4

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 248181. | 7.9 | 278. | 10.9 |
| 2 | 310091. | 9.8 | 305. | 12.0 |
| 3 | 319600. | 10.1 | 236. | 9.3 |
| 4 | 123465. | 3.9 | 156. | 6.1 |
| 5 | 344889. | 11.0 | 290. | 11.4 |
| 6 | 560344. | 17.8 | 420. | 16.5 |
| 7 | 1245243. | 39.5 | 861. | 33.8 |
| Total | 3151813. | 100.0 | 2546. | 100.0 |

Table 2-55. (continued)

Package no. 5

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 220354. | 7.0 | 194. | 7.5 |
| 2 | 267830. | 8.5 | 303. | 11.6 |
| 3 | 268382. | 8.5 | 247. | 9.5 |
| 4 | 97446. | 3.1 | 139. | 5.3 |
| 5 | 394267. | 12.5 | 290. | 11.1 |
| 6 | 652001. | 20.8 | 499. | 19.1 |
| 7 | 1244803. | 39.6 | 936. | 35.9 |
| Total | 3145083. | 100.0 | 2608. | 100.0 |

Package no. 6

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 185708. | 6.1 | 219. | 8.5 |
| 2 | 280980. | 9.2 | 253. | 9.8 |
| 3 | 267254. | 8.8 | 234. | 9.0 |
| 4 | 207392. | 6.8 | 239. | 9.2 |
| 5 | 348019. | 11.4 | 276. | 10.7 |
| 6 | 712375. | 23.4 | 516. | 19.9 |
| 7 | 1044904. | 34.3 | 851. | 32.9 |
| Total | 3046632. | 100.0 | 2588. | 100.0 |

Package no. 7

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 184282. | 5.5 | 220. | 8.6 |
| 2 | 318487. | 9.5 | 282. | 10.9 |
| 3 | 430066. | 12.9 | 230. | 8.9 |
| 4 | 113986. | 3.4 | 134. | 5.2 |
| 5 | 509436. | 15.3 | 271. | 10.5 |
| 6 | 710479. | 21.3 | 573. | 22.2 |
| 7 | 1072964. | 32.1 | 869. | 33.7 |
| Total | 3339700. | 100.0 | 2579. | 100.0 |

Package no. 8

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 348781. | 11.4 | 284. | 10.9 |
| 2 | 200468. | 6.6 | 236. | 9.0 |
| 3 | 244691. | 8.0 | 225. | 8.6 |
| 4 | 115377. | 3.8 | 149. | 5.7 |
| 5 | 384388. | 12.6 | 319. | 12.2 |
| 6 | 755919. | 24.8 | 602. | 23.1 |
| 7 | 1000222. | 32.8 | 796. | 30.5 |
| Total | 3049846. | 100.0 | 2611. | 100.0 |

Table 2-55. (continued)

Package no. 9

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 230399. | 7.1 | 251. | 10.0 |
| 2 | 260799. | 8.1 | 236. | 9.4 |
| 3 | 402143. | 12.5 | 318. | 12.7 |
| 4 | 116829. | 3.6 | 157. | 6.3 |
| 5 | 276911. | 8.6 | 210. | 8.4 |
| 6 | 764391. | 23.7 | 534. | 21.4 |
| 7 | 1173680. | 36.4 | 796. | 31.8 |
| Total | 3224852. | 100.0 | 2502. | 100.0 |

Package no. 10

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 232566. | 7.3 | 194. | 7.7 |
| 2 | 334795. | 10.5 | 289. | 11.4 |
| 3 | 491208. | 15.4 | 280. | 11.1 |
| 4 | 158964. | 5.0 | 154. | 6.1 |
| 5 | 324640. | 10.2 | 292. | 11.6 |
| 6 | 501003. | 15.7 | 409. | 16.2 |
| 7 | 1143020. | 35.9 | 905. | 35.9 |
| Total | 3186196. | 100.0 | 2523. | 100.0 |

Package no. 11

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 302919. | 8.7 | 244. | 9.5 |
| 2 | 321393. | 9.2 | 306. | 11.9 |
| 3 | 338923. | 9.7 | 270. | 10.5 |
| 4 | 85061. | 2.4 | 111. | 4.3 |
| 5 | 476348. | 13.7 | 287. | 11.1 |
| 6 | 629259. | 18.0 | 477. | 18.5 |
| 7 | 1336665. | 38.3 | 883. | 34.2 |
| Total | 3490568. | 100.0 | 2578. | 100.0 |

Package no. 12

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 179518. | 5.5 | 216. | 8.3 |
| 2 | 323518. | 9.9 | 361. | 13.9 |
| 3 | 336701. | 10.3 | 267. | 10.3 |
| 4 | 165192. | 5.1 | 188. | 7.3 |
| 5 | 370284. | 11.4 | 195. | 7.5 |
| 6 | 586239. | 18.0 | 384. | 14.8 |
| 7 | 1296899. | 39.8 | 984. | 37.9 |
| Total | 3258351. | 100.0 | 2595. | 100.0 |

Table 2-55. (continued)

Package no. 13

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 325440. | 10.6 | 320. | 12.1 |
| 2 | 308651. | 10.1 | 309. | 11.7 |
| 3 | 252631. | 8.2 | 231. | 8.8 |
| 4 | 146409. | 4.8 | 195. | 7.4 |
| 5 | 315546. | 10.3 | 245. | 9.3 |
| 6 | 559805. | 18.2 | 429. | 16.3 |
| 7 | 1160592. | 37.8 | 908. | 34.4 |
| Total | 3069084. | 100.0 | 2637. | 100.0 |

Package no. 14

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 226691. | 6.6 | 224. | 8.5 |
| 2 | 283089. | 8.2 | 260. | 9.9 |
| 3 | 520244. | 15.2 | 287. | 10.9 |
| 4 | 129235. | 3.8 | 153. | 5.8 |
| 5 | 469560. | 13.7 | 304. | 11.5 |
| 6 | 668814. | 19.5 | 537. | 20.4 |
| 7 | 1129854. | 33.0 | 868. | 33.0 |
| Total | 3427487. | 100.0 | 2633. | 100.0 |

All packages

| STOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 253550. | 7.9 | 3452. | 9.6 |
| 2 | 279427. | 8.6 | 3896. | 10.8 |
| 3 | 388867. | 12.0 | 3641. | 10.1 |
| 4 | 141350. | 4.4 | 2368. | 6.5 |
| 5 | 369121. | 11.4 | 3686. | 10.2 |
| 6 | 635086. | 19.6 | 6730. | 18.6 |
| 7 | 1167197. | 36.1 | 12336. | 34.2 |
| Total | 3234598. | 100.0 | 36109. | 100.0 |

Table 2-56. Weighted and unweighted percentages of 17-year-olds in Year 11 by DOC for all packages.

| All packages | | | | | | |
|---|---|---|---|---|---|---|
| | Year 11 | | Year 10 | Year 11 | | Year 10 |
| DOC | Unweighted sum | Unweighted percent | Unweighted percent | Weighted sum | Weighted percent | Weighted percent |
| 1 | 7,517 | 20.8 | 26.6 | 503,260 | 15.6 | 21.5 |
| 2 | 6,074 | 16.8 | 21.3 | 675,505 | 20.9 | 26.1 |
| 3 | 6,730 | 18.7 | 10.1 | 635,086 | 19.6 | 12.0 |
| 4 | 15,788 | 43.7 | 42.0 | 1,420,747 | 43.9 | 40.4 |
| Total | 36,109 | 100.0 | 100.0 | 3,234,598 | 100.0 | 100.0 |

DOC 1 and 2 showed decreases, while DOC 3 and 4 experienced increases as results of the change in sample allocation procedure. Table 2-57 lists Year 11 weighted and unweighted percentages by DOC and package. Table 2-58 presents percentages of Year 11 Age Class 3 sample schools by DOC, TOC, and STOC.

Table 2-59 shows Year 10 and 11 weighted percentages of Age Class 3 eligibles by STOC and DOC. As in each of the other two age classes, the major part of STOC 2 has come from DOC 1 and the remainder from DOC 2, with the converse true for STOC 3.

As already indicated, table 2-60 presents Year 11 weighted and unweighted percentage of Age Class 1, 2, and 3 eligibles by STOC for all packages in each region.

Table 2-57. Distribution of year 11 17-year-old estimated population and sample respondents by DOC and package.

Package no. 1

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 584345. | 18.0 | 610. | 23.6 |
| 2 | 627103. | 19.4 | 367. | 14.2 |
| 3 | 619389. | 19.1 | 473. | 18.3 |
| 4 | 1410941. | 43.5 | 1134. | 43.9 |
| Total | 3241778. | 100.0 | 2584. | 100.0 |

Package no. 2

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 440882. | 13.5 | 474. | 18.6 |
| 2 | 807367. | 24.6 | 443. | 17.4 |
| 3 | 620153. | 18.9 | 448. | 17.6 |
| 4 | 1410812. | 43.0 | 1180. | 46.4 |
| Total | 3279214. | 100.0 | 2545. | 100.0 |

Package no. 3

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 470068. | 13.9 | 506. | 19.5 |
| 2 | 817342. | 24.2 | 472. | 18.3 |
| 3 | 551035. | 16.4 | 429. | 16.5 |
| 4 | 1535317. | 45.5 | 1173. | 45.5 |
| Total | 3373762. | 100.0 | 2580. | 100.0 |

Package no. 4

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 573980. | 18.2 | 575. | 22.5 |
| 2 | 524065. | 16.6 | 412. | 16.2 |
| 3 | 560344. | 17.8 | 420. | 16.5 |
| 4 | 1493424. | 47.4 | 1139. | 44.7 |
| Total | 3151813. | 100.0 | 2546. | 100.0 |

Package no. 5

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 460056. | 14.6 | 555. | 21.3 |
| 2 | 567869. | 18.1 | 424. | 16.3 |
| 3 | 652001. | 20.7 | 499. | 19.1 |
| 4 | 1465157. | 46.6 | 1130. | 43.3 |
| Total | 3145083. | 100.0 | 2608. | 100.0 |

Table 2-57. (continued)

Package no. 6

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 560570. | 18.4 | 582. | 22.5 |
| 2 | 543075. | 17.8 | 420. | 16.2 |
| 3 | 712375. | 23.4 | 516. | 19.9 |
| 4 | 1230612. | 40.4 | 1070. | 41.4 |
| Total | 3046632. | 100.0 | 2588. | 100.0 |

Package no. 7

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 459056. | 13.7 | 466. | 18.1 |
| 2 | 912919. | 27.3 | 451. | 17.5 |
| 3 | 710479. | 21.3 | 573. | 22.2 |
| 4 | 1257246. | 37.7 | 1089. | 42.2 |
| Total | 3339700. | 100.0 | 2579. | 100.0 |

Package no. 8

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 409298. | 13.4 | 491. | 18.8 |
| 2 | 535626. | 17.6 | 438. | 16.8 |
| 3 | 755919. | 24.8 | 602. | 23.0 |
| 4 | 1349003. | 44.2 | 1080. | 41.4 |
| Total | 3049846. | 100.0 | 2611. | 100.0 |

Package no. 9

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 511338. | 15.9 | 537. | 21.5 |
| 2 | 545344. | 16.9 | 384. | 15.3 |
| 3 | 764391. | 23.7 | 534. | 21.3 |
| 4 | 1403779. | 43.5 | 1047. | 41.9 |
| Total | 3224852. | 100.0 | 2502. | 100.0 |

Package no. 10

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 502659. | 15.8 | 501. | 19.8 |
| 2 | 806948. | 25.3 | 514. | 20.4 |
| 3 | 501004. | 15.7 | 409. | 16.2 |
| 4 | 1375585. | 43.2 | 1099. | 43.6 |
| Total | 3186196. | 100.0 | 2523. | 100.0 |

Table 2-57. (continued)

Package no. 11

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 426159. | 12.2 | 476. | 18.5 |
| 2 | 795565. | 22.8 | 498. | 19.3 |
| 3 | 629259. | 18.0 | 477. | 18.5 |
| 4 | 1639585. | 47.0 | 1127. | 43.7 |
| Total | 3490568. | 100.0 | 2578. | 100.0 |

Package no. 12

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 624554. | 19.2 | 664. | 25.6 |
| 2 | 571141. | 17.5 | 347. | 13.4 |
| 3 | 586239. | 18.0 | 384. | 14.8 |
| 4 | 1476417. | 45.3 | 1200. | 46.2 |
| Total | 3258351. | 100.0 | 2595. | 100.0 |

Package no. 13

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 516630. | 16.8 | 569. | 21.5 |
| 2 | 506618. | 16.5 | 411. | 15.6 |
| 3 | 559804. | 18.3 | 429. | 16.2 |
| 4 | 1486032. | 48.4 | 1228. | 46.6 |
| Total | 3069084. | 100.0 | 2637. | 100.0 |

Package no. 14

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 506047. | 14.8 | 511. | 19.4 |
| 2 | 896081. | 26.1 | 493. | 18.7 |
| 3 | 668814. | 19.5 | 537. | 20.4 |
| 4 | 1356545. | 39.6 | 1092. | 41.5 |
| Total | 3427487. | 100.0 | 2633. | 100.0 |

All packages

| DOC | Estimate | Percent | Respondents | Percent |
|---|---|---|---|---|
| 1 | 503260. | 15.6 | 7517. | 20.8 |
| 2 | 675505. | 20.9 | 6074. | 16.9 |
| 3 | 635086. | 19.6 | 6730. | 18.7 |
| 4 | 1420747. | 43.9 | 15788. | 43.7 |
| Total | 3234598. | 100.0 | 36109. | 100.0 |

Table 2-58, Distribution of year 11 17-year-old sample schools by DOC, TOC, and STOC codes

| | DOC | | TCC | | STOC | |
|---|---|---|---|---|---|---|
| Code | No. | Pct. | No. | Pct. | No. | Pct. |
| 1 | 102 | 23.5 | 70 | 16.1 | 70 | 16.1 |
| 2 | 68 | 15.6 | 63 | 14.5 | 63 | 14.5 |
| 3 | 53 | 12.2 | 38 | 8.7 | 38 | 8.7 |
| 4 | 212 | 48.7 | 264 | 60.7 | 31 | 7.1 |
| 5 | X | X | X | X | 38 | 8.7 |
| 6 | X | X | X | X | 53 | 12.2 |
| 7 | X | X | X | X | 142 | 32.7 |
| Total | 435 | 100.0 | 435 | 100.0 | 435 | 100.0 |

Table 2-59. Weighted percentages of 17-year-olds by STOC and DOC

Year 11

| DOC | STOC | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 1 | 0.0 | 7.5 | 4.5 | 4.4 | 0.0 | 0.0 | 0.0 | 16.4 |
| 2 | 0.0 | 2.2 | 7.4 | 0.0 | 11.5 | 0.0 | 0.0 | 21.1 |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 19.5 | 0.0 | 19.5 |
| 4 | 7.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 35.2 | 43.0 |
| Total | 7.8 | 9.7 | 11.9 | 4.4 | 11.5 | 19.5 | 35.2 | 100.0 |

Year 10

| DOC | STOC | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 1 | 0.0 | 8.2 | 3.5 | 11.0 | 0.0 | 0.0 | 0.0 | 22.7 |
| 2 | 0.0 | 3.7 | 6.2 | 0.0 | 15.5 | 0.0 | 0.0 | 25.4 |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.7 | 0.0 | 11.7 |
| 4 | 7.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 32.7 | 40.2 |
| Total | 7.5 | 11.9 | 9.7 | 11.0 | 15.5 | 11.7 | 32.7 | 100.0 |

Table 2-60. Distribution of Year 11 estimated population and sample respondents by STOC, region and age.

| Region/STOC | | Estimated population 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | Respondents 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 9-Year-Olds | | | | | | | | |
| Northeast | No. | 41,[illegible]9 | 83,134 | 76,109 | 49,367 | 65,052 | 106,756 | 327,867 | 750,064 | 297 | 1,291 | 599 | 593 | 420 | 616 | 3,101 | 6,917 |
| | Pct. | 5.6 | 11.1 | 10.1 | 6.6 | 8.7 | 14.2 | 43.7 | 100.0 | 4.3 | 18.7 | 8.6 | 8.6 | 6.1 | 8.9 | 44.8 | 100.0 |
| Southeast | No. | 98,230 | 9,727 | 51,838 | 39,834 | 60,298 | 159,575 | 366,374 | 785,876 | 980 | 180 | 483 | 458 | 577 | 1,126 | 3,022 | 6,826 |
| | Pct. | 12.5 | 1.2 | 6.6 | 5.1 | 7.7 | 20.3 | 46.6 | 100.0 | 14.4 | 2.6 | 7.1 | 6.7 | 8.4 | 16.5 | 44.3 | 100.0 |
| Central | No. | 120,602 | 34,353 | 53,885 | 96,072 | 104,134 | 115,307 | 326,806 | 851,159 | 1,180 | 541 | 451 | 885 | 891 | 698 | 3,434 | 8,080 |
| | Pct. | 14.2 | 14.2 | 6.3 | 11.3 | 12.2 | 13.6 | 38.4 | 100.0 | 14.6 | 6.7 | 5.6 | 11.0 | 11.0 | 8.6 | 42.5 | 100.0 |
| West | No. | 60,846 | 77,642 | 163,732 | 82,419 | 135,167 | 85,318 | 347,344 | 952,468 | 467 | 887 | 1,360 | 757 | 983 | 564 | 2,262 | 7,280 |
| | Pct. | 6.4 | 8.1 | 17.2 | 8.7 | 14.2 | 8.9 | 36.5 | 100.0 | 6.4 | 12.2 | 18.7 | 10.4 | 13.5 | 7.7 | 31.1 | 100.0 |
| Total | No. | 321,457 | 204,856 | 345,564 | 267,692 | 364,651 | 466,956 | 1,368,391 | 3,339,567 | 2,924 | 2,899 | 2,893 | 2,693 | 2,871 | 3,004 | 11,819 | 29,103 |
| | Pct. | 9.6 | 6.1 | 10.4 | 8.0 | 10.9 | 14.0 | 41.0 | 100.0 | 10.0 | 10.0 | 9.9 | 9.3 | 9.9 | 10.3 | 40.6 | 100.0 |
| | | | | | | | | | 13-Year-Olds | | | | | | | | |
| Northeast | No. | 45,522 | 90,632 | 71,817 | 50,404 | 80,271 | 151,792 | 313,916 | 804,354 | 547 | 1,600 | 980 | 998 | 923 | 1,781 | 3,523 | 10,352 |
| | Pct. | 5.6 | 11.3 | 8.9 | 6.3 | 10.0 | 18.9 | 39.0 | 100.0 | 5.3 | 15.5 | 9.5 | 9.6 | 8.9 | 17.2 | 34.0 | 100.0 |
| Southeast | No. | 92,468 | 44,675 | 28,359 | 31,930 | 79,990 | 174,229 | 359,938 | 811,589 | 1,096 | 654 | 389 | 419 | 813 | 1,734 | 4,407 | 9,512 |
| | Pct. | 11.4 | 5.5 | 3.5 | 3.9 | 9.9 | 21.5 | 44.3 | 100.0 | 11.5 | 6.9 | 4.1 | 4.4 | 8.6 | 18.2 | 46.3 | 100.0 |
| Central | No. | 129,285 | 43,985 | 110,625 | 75,395 | 62,498 | 153,329 | 273,911 | 849,028 | 1,870 | 809 | 1,383 | 796 | 730 | 1,870 | 4,161 | 11,625 |
| | Pct. | 15.2 | 5.2 | 13.0 | 8.9 | 7.4 | 18.0 | 32.3 | 100.0 | 16.1 | 7.0 | 11.9 | 6.8 | 6.3 | 16.1 | 35.8 | 100.0 |
| West | No. | 47,597 | 96,459 | 97,523 | 37,00[illegible] | 179,854 | 165,550 | 238,481 | 862,472 | 603 | 1,101 | 1,351 | 681 | 2,292 | 1,693 | 2,364 | 10,085 |
| | Pct. | 5.5 | 11.2 | 11.3 | 4.3 | 20.8 | 19.2 | 27.7 | 100.0 | 6.0 | 10.9 | 13.4 | 6.8 | 22.7 | 16.8 | 23.4 | 100.0 |
| Total | No. | 314,872 | 275,751 | 308,324 | 194,737 | 402,613 | 644,900 | 1,186,246 | 3,327,443 | 4,116 | 4,164 | 4,103 | 2,894 | 4,758 | 7,084 | 14,455 | 41,574 |
| | Pct. | 9.5 | 8.3 | 9.2 | 5.8 | 12.1 | 19.4 | 35.6 | 100.0 | 9.9 | 10.0 | 9.9 | 7.0 | 11.4 | 17.0 | 34.8 | 100.0 |
| | | | | | | | | | 17-Year-Olds | | | | | | | | |
| Northeast | No. | 27,682 | 101,465 | 63,366 | 26,778 | 74,897 | 137,545 | 284,032 | 715,765 | 353 | 1,755 | 663 | 462 | 810 | 1,385 | 3,023 | 8,451 |
| | Pct. | 3.9 | 14.2 | 8.8 | 3.7 | 10.5 | 19.2 | 39.7 | 100.0 | 4.2 | 20.7 | 7.8 | 5.5 | 9.6 | 16.4 | 35.8 | 100.0 |
| Southeast | No. | 95,248 | 19,826 | 28,279 | 26,102 | 83,737 | 148,228 | 348,177 | 749,594 | 1,132 | 253 | 507 | 461 | 452 | 1,528 | 3,494 | 7,827 |
| | Pct. | 12.7 | 2.6 | 3.8 | 3.5 | 11.2 | 19.8 | 46.4 | 100.0 | 14.5 | 3.2 | 6.5 | 5.9 | 5.8 | 19.5 | 44.6 | 100.0 |
| Central | No. | 93,092 | 70,554 | 135,870 | 28,482 | 98,825 | 175,990 | 315,914 | 918,727 | 1,599 | 896 | 805 | 595 | 1,201 | 2,034 | 3,369 | 10,499 |
| | Pct. | 10.1 | 7.7 | 14.8 | 3.1 | 10.7 | 19.2 | 34.4 | 100.0 | 15.2 | 8.5 | 7.7 | 5.7 | 11.4 | 19.4 | 32.1 | 100.0 |
| West | No. | 37,528 | 87,582 | 161,352 | 59,988 | 111,662 | 173,323 | 219,074 | 850,509 | 368 | 992 | 1,666 | 850 | 1,223 | 1,783 | 2,450 | 9,332 |
| | Pct. | 4.4 | 10.3 | 19.0 | 7.0 | 13.1 | 20.4 | 25.8 | 100.0 | 3.9 | 10.6 | 17.9 | 9.1 | 13.1 | 19.1 | 26.3 | 100.0 |
| Total | No. | 253,550 | 279,427 | 388,867 | 141,350 | 369,121 | 635,086 | 1,167,197 | 3,234,598 | 3,452 | 3,896 | 3,641 | 2,368 | 3,686 | 6,730 | 12,336 | 36,109 |
| | Pct. | 7.9 | 8.6 | 12.0 | 4.4 | 11.4 | 19.6 | 36.1 | 100.0 | 9.6 | 10.8 | 10.1 | 6.5 | 10.2 | 18.6 | 34.2 | 100.0 |

## 2.7 Historical File

A historical computer file of districts and schools selected for National Assessment in Years 04 through 06 was created during operational Year 07. In Year 08, this file was updated to include districts and schools selected for assessment in Years 07 and 08. Due to budgetary constraints the historical file was not updated to include districts and schools selected for assessment in Year 09 or 10. Neither were STOC codes added to the file for schools selected for assessment in Years 04 through 08. In Year 11, work was begun on updating the file for Years 9, 10, and 11, to be completed in Year 13.

## 2.8 Year 11 Efficiency Studies

Work on Year 11 Efficiency Studies was begun in late 1980, to be completed in 1981.

## 2.9 Response Experience

The schools selected in Year 11 are classified in table 2-61 by region and age class. As noted, these figures included schools which were selected for participation in Year 11 after the initial secondary sample had been selected (i.e., new schools, sample schools with grade range changes which were added to the sample, and replacement schools). A total of 1,740 schools was selected for the Year 11 sample: 608 for Age Class 1, 642 for Age Class 2, and 490 for Age Class 3.

The schools which were added to the initial Year 11 secondary sample are classified by region and age class in table 2-62. Of the 54 schools added, three were selected as a result of sample updating operations. The updating operations consisted of the following activities: (1) new schools with eligibles in selected districts were given a chance to enter the sample on a probability basis; (2) sample schools which had undergone grade

Table 2-61. Number of schools selected in Year 11 sample[1/]

| | Region 1 | Region 2 | Region 3 | Region 4 | Total |
|---|---|---|---|---|---|
| Age Class 1 | 138 | 125 | 191 | 154 | 608 |
| Age Class 2 | 154 | 145 | 192 | 151 | 642 |
| Age Class 3 | 107 | 103 | 145 | 135 | 490 |
| Total Year 11 Sample | 399 | 373 | 528 | 440 | 1,740 |

1/ Includes schools selected for participation in Year 11 after the initial secondary sample had been drawn.

Table 2-62. Number of schools added to initial Year 11 secondary sample after initial secondary sample selection

| | Region 1 | Region 2 | Region 3 | Region 4 | Total |
|---|---|---|---|---|---|
| Age Class 1 | 2 | 1 | 0 | 13 | 16 |
| Age Class 2 | 6 | 4 | 4 | 4 | 18 |
| Age Class 3 | 6 | 3 | 2 | 9 | 20 |
| Total Year 11 Sample | 14 | 8 | 6 | 26 | 54[2/] |

2/ Three were selected as a result of sample updating operations.

range changes such that they now had eligibles for a previously unconsidered age class were also given a chance to enter the sample on a probability basis. The remaining 51 of the 54 additional schools were selected as replacements for refusals.

Table 2-67 summarizes the Year 11 school response experience by age class. For Age Class 1, 92.1 percent of the selected schools participated; 83.2 percent of the selected schools participated at Age Class 2; and 84.1 percent participated at Age Class 3. Across the entire sample, a total of 86.6 percent of the selected schools participated. Schools were classified as nonparticipants either because they refused, were closed, had no eligible respondents, or for other reasons. Classification of selected schools by these nonparticipation categories is also included in table 2-63.

Year 11 school cooperation is summarized in table 2-64. Based on the originally selected schools, less those schools which were found to be closed or no longer have in-range grades, the Year 11 cooperation rate was 92.9 percent.

Tables 2-65 and 2-66 present summary data, by age class, on the number and percentages of sessions completed and students assessed during Year 11. Table 2-65 shows data only for regular assignments, while table 2-66 presents summary data only for standby assignments. Included in these tables are the results of the nonrespondent followup conducted in Age Class 3 assessment.

Session completion rates for regular assignments ranged from 98.8 to 100.0 percent. Session completion rates for standby assignments ranged from 72.7 to 89.5 percent. Students assessed in regular assignments ranged from 78.9 to 90.1 percent. Students assessed in standby assignments ranged from 88.5 to 93.3 percent.

Table 2-63. Summary of school response in Year 11 sample

| | Age Class 1 | | Age Class 2 | | Age Class 3 | | Total Sample | |
|---|---|---|---|---|---|---|---|---|
| | No. | Percent of Total | No. | Percent of Total | No. | Percent of Total | No. | Percent of Total |
| Assessment Conducted | 560 | 92.1 | 534 | 83.2 | 412 | 84.1 | 1,506 | 86.6 |
| Refused | 32 | 5.3 | 41 | 6.4 | 46 | 9.4 | 119 | 6.8 |
| Closed | 6 | 1.0 | 10 | 1.6 | 2 | 0.4 | 18 | 1.0 |
| No Eligibles Enrolled | 10 | 1.6 | 54 | 8.4 | 28 | 5.7 | 92 | 5.3 |
| Other | 0 | 0.0 | 3[1/] | 0.4 | 2[2/] | 0.4 | 5 | 0.3 |
| Total Selected | 608 | 100.0 | 642 | 100.0 | 490 | 100.0 | 1,740 | 100.0 |

1/ One school selected in the sample for the Northeastern Region was not in existence; also, two schools in the sample for the Central Region were found to be in nonsample counties and, thus, were eliminated from the Year 11 sample of schools.

2/ These schools were found to be situated in a county outside of the PSU in which they were selected and were dropped from the sample.

Table 2-64. Summary of school cooperation in Year 11 sample

| | Age Class 1 | Age Class 2 | Age Class 3 | Total Sample |
|---|---|---|---|---|
| No. of originally selected schools (A) | 590 | 623 | 467 | 1,680 |
| No. of original out-of-range or closed schools (B) | 8 | 16 | 6 | 30 |
| No. of original refusal schools (C) | 32 | 41 | 44 | 117 |
| Cooperation rate $\frac{(A-B)-C}{(A-B)}$ % | 94.5% | 93.2% | 90.5% | 92.9% |

Table 2-65. Numbers and percents of sessions completed, packages administered, and students assessed Year 11 regular assignments

| | | Group packages | | | |
|---|---|---|---|---|---|
| | | Sessions assigned | Sessions completed | Students expected to be assessed[1] | Students actually assessed completion rate[2] |
| Age Class 1 | Number | 1,764 | 1,764 | 32,200 | 29,013 |
| | Percent | | 100.0 | | 90.1 |
| Age Class 2 | Number | 2,380 | 2,352 | 48,295 | 41,488 |
| | Percent | | 98.8 | | 85.9 |
| Age Class 3 | Number | 2,455 | 2,425 | 46,627 | 36,027 |
| | Percent | | 98.8 | | 78.0 |
| Total | Number | 6,599 | 6,541 | 127,122 | 106,528 |
| | Percent | | 99.1 | | 83.7 |

[1] Adjusted to the lower of the number of students assigned to be assessed in each sample school or the number of eligibles enrolled in each sample school.

[2] Completion rate for Age Classes 1 and 2 is ratio of the number of students assessed to the number of students expected to be assessed. For Age Class 3, it is (1) the initial response rate (no. assessed ÷ no. expected to be assessed in the initial sessions) plus, (2) the percentage of nonrespondents in followup schools times the followup response rate.

Table 2-66. Numbers and percents of sessions completed, packages administered, and students assessed Year 11 standby assignments

| | | Group packages | | | |
|---|---|---|---|---|---|
| | | Sessions assigned | Sessions completed | Students expected to be assessed[1] | Students actually assessed completion rate[2] |
| Age Class 1 | Number | 19 | 17 | 165 | 146 |
| | Percent | | 89.5 | | 88.5 |
| Age Class 2 | Number | 50 | 40 | 210 | 196 |
| | Percent | | 80.0 | | 93.3 |
| Age Class 3 | Number | 22 | 16 | 124 | 112 |
| | Percent | | 72.7 | | 90.3 |
| Total | Number | 91 | 73 | 499 | 454 |
| | Percent | | 80.2 | | 91.0 |

1 Adjusted to the lower of the number of students assigned to be assessed in each sample school or the number of eligibles enrolled in each sample school.

2 Completion rate for Age Classes 1 and 2 is ratio of the number of students assessed to the number of students expected to be assessed. For Age Class 3, it is (1) the initial response rate (no. assessed ÷ no. expected to be assessed in the initial sessions) plus, (2) the percentage of nonrespondents in followup schools times the followup response rate.

## 2.10 Accessibility Status of 17-Year-Old Nonrespondents

In Year 11, three nonrespondents per 17-year-old school were selected and a form was completed for them to determine whether they were accessible or inaccessible. In nonfollowup schools, an initial package was selected and three nonrespondents were selected. In followup schools, a followup package was identified from which the three nonrespondents were selected. The nonrespondent package was identified on a separate package assignment form for each school. This form also included random numbers for selection of sample individuals.

Nonrespondents to each nonrespondent package were numbered down the right hand side of the Group Administration Schedule (GAS). Some schools noted that selected students were dropouts, transfers, or ineligibles after assessment. Some District Supervisors were omitting these students from the nonresponse form and others were including them. To keep field procedures simple, all dropouts, transfers, and ineligibles were numbered whether they were located before or after assessment. A copy of the GAS tearoff containing the numbered frame was mailed to RTI along with the nonrespondent form. Selected nonrespondents were identified by line number on the nonrespondent form (see appendix G) and by having their frame number circled on the GAS tearoff. All selected nonrespondents who were noted as transfers, dropouts, or ineligible before assessment were lined out and were not included in the sample which was tabulated. All transfers, dropouts, and ineligibles after assessment were not lined out and were included in the tabulation.

Table 2-67 summarizes the results of the tabulation of accessibility status for the sample of 958 17-year-old nonrespondents. Inaccessible students were counted as those who were ineligible, not enrolled, temporarily away but expected to return, temporarily away but not expected to return,

Table 2-67. Accessibility Status for Sample of Nonresponding 17-Year-Olds

| Region | No. ineligible | No. not enrolled | No. enrolled, attended more than 1 day in last 30 ? | No. enrolled, temp. away, but expect to return | No. enrolled not return | No. don't know | Total |
|---|---|---|---|---|---|---|---|
| Northeast | 4 | 11 | 200 | 0 | 13 | 4 | 232 |
| Southeast | 3 | 9 | 169 | 0 | 1 | 0 | 182 |
| Central | 3 | 8 | 266 | 13 | 0 | 1 | 291 |
| West | 3 | 11 | 225 | 8 | 4 | 2 | 253 |
| Total | 13 | 39 | 860 | 21 | 18 | 7 | 958 |

Inaccessible students

| | |
|---|---|
| Ineligible | 13 |
| Not enrolled | 39 |
| Temp. away - return | 21 |
| Temp. away - not return | 18 |
| Temp. away - I don't know | 7 |
| | 98 |

Percentage of nonrespondents who were inaccessible = $\frac{98}{958}$ x 100 = 10% (No Show Study $\frac{570}{2771}$ = 21%).

and temporarily away and not known whether they would return or not. A total of 98 or 10% (98/958), of the tabulated nonrespondents were classified as inaccessible. In the Year 10 pretest of this procedure for checking the attendance status of nonrespondents, the inaccessible percentage was 13%; in the No-Show study conducted in Year 04, the percentage inaccessible was 21%.

It is possible that the decline in the percentage inaccessible since Year 04 is due to implementation of procedures for updating the student sampling frame prior to sample selection. When the No-Show study was conducted, the 17-year-old sample was not selected early and updated. Updating the sample likely has caused the schools to clean the lists more thoroughly for inaccessibles.

## 2.11 Special Problems and Recommendations

The followup procedures implemented for 17-year-olds appear to have been effective in increasing the response rate to an acceptable level. Similar procedures should continue to be followed.

## REFERENCES FOR CHAPTER 2

[1] Chromy, James R. and Anne F. Clemmer, Year 11 Primary Sample for the National Assessment of Educational Progress. RTI Project 255U-1764, Final Report, June 1980.

[2] Sampling Department Staff. Formulation of Age Class 2 Weights--NAEP Year 03 In-School Survey. Working Paper No. 4 (Revised), RTI Project No. 25U-688. June 1972.

[3] Clemmer, Anne F. Formulation for Age 17 Nonrespondent Followup Weights in NAEP Year 10 In-School Sample. (Revised) RTI/1772/00-01 I, July 1979.

[4] Clemmer, Anne F. NAEP Year 05 In-School Package Assignment Procedure. Working Paper No. 4, RTI Project No. 255U-918, September 1974.

[5] District Supervisor Manual, Year 10. July 1978.

[6] Clemmer, Anne F., P. D. Lefler, and J. E. Richardson. NAEP Year 07 In-School Package Assignment Procedure. Working Paper No. 1, RTI Project No. 255U-1379, January 1977.

[7] Final Report of Year 11 In-School Quality Check Activities. October, 1980. RTI/1967/00-01F.

[8] Clemmer, Anne F. Year 07 Secondary and Tertiary Sample Design for the National Assessment of Educational Progress. Working Paper No. 8, RTI Project No. 255U-1061, April 1975.

# 3. SUPPLEMENTARY FRAME ASSESSMENT

## 3.1 Overview

It is estimated that perhaps 9 to 10 percent of all 16-½ to 17-½-year-olds are not enrolled in secondary schools when the in-school Age Class 3 assessment is conducted, and the Supplementary Frame assessment is designed to collect NAEP data from a probability sample of this portion of the Age Class 3 population. For Year 11, the Supplementary Frame assessment target population was operationally defined as individuals born in the period October 1, 1962 through September 30, 1963, and not enrolled in NAEP-eligible elementary or secondary schools anytime during March or April 1980. Excluded from the target population were nonreaders, non-English speaking individuals, persons living out of the country, and individuals deemed incapable of giving meaningful responses due to mental or physical impairment.

As in previous years, the NAEP Age Class 3 in-school sample served as the basis for the Supplementary Frame design. The NAEP Age Class 3 schools in each of the 83 Year 11 PSUs were sampled at a rate of one-half to identify the Supplementary Frame school subsample. A total of 209 schools were asked to participate for this phase of the assessment by providing lists of potentially eligible discontinuers for the three most recent school years and, for schools having twelfth grades, lists of potentially eligible early graduates. Cooperation was received from 207, or 99 percent, of the schools asked to participate for list compilation. After receipt from the schools, the discontinuer and early graduate lists were screened to eliminate persons with ineligible birthdates and duplicate listings, and to

establish the final stage sampling frame of potentially eligible individuals for each school. A sample of 965 discontinuers and 131 early graduates was selected from the sampling frame.

The field staff attempted to locate each of the individuals in the sample and assess those found to be eligible. Respondents were given the opportunity to complete up to three of the assessment packages and were remunerated at the rate of $5.00 for one, $10.00 for two and $20.00 for three completed packages. A total of 1,004 individuals, or about 92 percent of those in the sample, were located for screening; 752 of these were determined to be eligible; and 651 participated. Respondents completed a total of 1,916 packages, or an average of 137 responses for each of the fourteen instruments, a yield of about 9.5 percent above the design goal of 125 responses per instrument.

Survey weights, adjusted for nonresponse, were computed for the completed packages and were delivered to National Assessment on magnetic tape. Summary tabulations and other relevant documentation were transmitted concurrently with the weight tape.

3.2 Sampling Plan Development

National Assessment provided the following initial specifications for the Year 11 Supplementary Frame assessment:

(A) Out-of-school 17-year-olds were to be assessed from Age Class 3 school discontinuer lists and early graduate lists;

(B) The birthdate range definition for 17-year-olds in the Supplementary Frame assessment was to coincide with the definition employed for the Year 11 in-school assessment;

(C) A probability subsample of approximately one-half the NAEP Age Class 3 schools should be selected in the Year 11 PSUs;

(D) The sample should be designed to yield approximately 125 responses for each of fourteen packages;

(E) Respondents should be permitted to complete up to three of the Age Class 3 packages.

The sampling plan for the Supplementary Frame assessment was developed in accordance with the foregoing specifications based on the Year 07 survey experience and expected Year 11 results.

The specifications called for 125 responses for each of the fourteen instruments, or approximately 1,750 completed packages, in total. Respondents were expected to complete an average of 2.90 packages and the expected overall participation rate was 55 percent, hence, the sample was designed to contain

$$\frac{1,750}{(2.90)(0.55)} = 1,096$$

potentially eligible individuals.

3.3 School Selection

A half-sample of the NAEP Age Class 3 schools was selected in each PSU to comprise the Supplementary Frame school sample. Within each of the PSUs, the NAEP Age Class 3 sample schools were divided into two sets, which were balanced to the extent possible on the number of schools, size of schools, SES strata, and 17-year-old enrollment. One of the two groups was selected from each PSU with probability equal to one-half. The Supplementary Frame schools were designated on the school data files and on the List of Schools Selected for each PSU which were mailed to the District Supervisor prior to initial meetings with school principals.

Approximately half of the new schools subsequently identified and chosen for addition to the NAEP Age Class 3 sample were selected for inclusion in the Supplementary Frame sample. The number of Supplementary Frame schools by region is presented in table 3-1.

Table 3-1. Year 11 Supplementary Frame sample schools by region

| Region | Total Supplementary Frame schools | Dropped from sample * | NAEP refusal | Asked to participate |
|---|---|---|---|---|
| Northeast | 53 | 2 | 6 | 45 |
| Southeast | 54 | 4 | 3 | 47 |
| Central | 71 | 2 | 4 | 65 |
| West | 61 | 2 | 7 | 52 |
| Total | 239 | 10 | 20 | 209 |

* Closed, no Age Class 3 grade, or no eligible enrollment.

Since the total school sample for 17-year-olds adequately represents the various subpopulations of interest, a 50 percent subsample of the schools, selected with equal probabilities, also is representative of the subpopulations.

3.4 Dropout and Early Graduate Frame Construction and Sample Selection

Supplementary Frame sample schools were asked to provide lists of individuals whose birthdates were in the range which defined Year 11 17-year-olds (10/1/62 through 9/30/63), and who left school during any of the academic years 1977-78, 1978-79, or 1979-80. The listing was to include students who failed to return to school following summer vacation and who were not known to have enrolled in another school. Discontinuers whose birthdates were unknown were also listed. Not to be included in the listing were students who reentered school and who were enrolled at the time of Age Class 3 assessment, nor students who transferred directly to other schools. For each listed individual, the last known address was obtained, and whenever possible, the birthdate and the parents' names and address.

Supplementary Frame sample schools which had a twelfth grade were asked to provide a list of persons whose birthdates were in the range which defined Year 11 17-year-olds, and who had graduated prior to the Year 11 Age Class 3 in-school assessment. Subsampling was used for searching school graduate records for the desired early graduates in large schools. Two of the four alphabet sectors A-D, E-K, L-R, and S-Z was selected using simple random sampling. In schools with more than 250 graduates per year, only the records for graduates whose last names fell within either of the prescribed alphabet sectors needed to be searched for early graduates. In smaller schools all graduate records were to be searched for the early graduates. For early graduates identified through this screening process, the schools were asked to provide addresses, birthdates, and parents' names and addresses.

The school discontinuer and early graduate lists were forwarded to RTI's sampling staff after receipt from the field. Receipt of the lists was recorded and a record was made of requested information which was not provided due to refusal, nonavailability, or other reasons. The lists were reviewed for legibility and adherence to list acquisition specifications, and any resulting problems or questions were reported to RTI's National Assessment Administration Center for resolution.

The discontinuer and early graduate lists from each school were clerically scanned to identify and delete ineligible individuals and duplicates, and the edited lists were serially numbered to facilitate sample selection.

Since PSUs and schools were selected with probabilities approximately proportional to the estimated number of 17-year-olds, an equal allocation of sample individuals to replicates was used. The Year 11 PSU sample was comprised of eight one-replicate PSUs, 71 two-replicate PSUs and four

three-replicate PSUs. Therefore, the desired sample of 1,096 individuals could potentially be allocated to a total of 162 replicates, yielding an average allocation of 6.77 sample individuals per replicate. It was anticipated, however, that for some PSUs no lists of discontinuers or early graduates would be submitted, due either to all sample schools refusing or reporting that their records disclosed no age eligible individuals. It was also anticipated that some further loss would be experienced due to cases in which the number of potentially eligible individuals reported would be less than the sample allocation for the PSU. Rather than fix a specific allocation of the sample based on prereceipt estimates these anticipated losses, an iterative allocation plan was employed. An initial allocation of the desired 1,096 sample cases to PSUs based on number of replicates was performed incorporating the listing results known at that time. Then, as the list compilation proceeded and specific instances of loss from the desired allocations were identified, the sample allocation was adjusted to assure that the target yield of 1,096 sample cases would be achieved. This allocation adjustment procedure was repeated several times as sample selection proceeded, with adjustments being made only for PSUs in which student sampling was yet to be performed.

In the final allocation, most one-replicate PSUs were allocated 7 or 8 cases; most two-replicate PSUs were allocated 14 or 15 cases; and most three-replicate PSUs were assigned 21 or 22 cases. The final average replicate allocation was 6.85 (1,096 ÷ 160) cases, since in one two-replicate PSU no sample was possible because all three Supplementary Frame sample schools were NAEP refusals. A reduced sample was necessary in eight PSUs due to listing shortages, and in these cases all listed individuals were included in the sample.

Within PSUs, the student sample was allocated to the two sampling frames (discontinuer lists and early graduate lists) using a strategy which optimized the number of the scarce early graduates in the sample. In most PSUs, early graduates were included in the sample with certainty. In order to control representation from both frames, however, early graduates were not permitted to constitute more than half a PSU's sample allocation, unless the total number of potentially eligible discontinuers reported for the PSU was insufficient to fill out the specified sample allocation.

Within each PSU, the discontinuer sample was allocated to schools using a procedure which approximately equalized the overall inclusion probabilities of sample discontinuers in the PSU. A similar procedure was used for allocating the early graduate sample, whenever necessary. Simple random selection was used to specify sample individuals within schools.

The described allocation and selection procedures were implemented and a sample of 1,096 individuals was selected--965 discontinuers and 131 early graduates. A field instrument, the Individual Screening Questionnaire (ISQ), was prepared for each sample individual. Information entered on the ISQ included the individual's name, last known address, parents' names and address, individual's birthdate and date left school, as reported from school records. Any peripheral information provided from the school records which might have been helpful in locating the selected individual was also recorded. All sample selection and ISQ preparation was completed by June 6, 1980.

### 3.5 Package Assignment

National Assessment specified that the Year 11 Supplementary Frame assessment be conducted using the 14 Year 11 Age Class 3 in-school Reading/ Literature packages. Each respondent was to be permitted to complete up to

three packages, including associated package supplements. A background questionnaire was to be administered to each respondent prior to package administration to ensure its completion.

Package assignment specifications were provided by National Assessment and consisted of a listing of 110 ordered package triplets or sets, which conformed to a complex set of packaging protocol constraints. Procedures were to be implemented by RTI which made assignment of any of the 110 triplets to a respondent equally likely.

RTI's National Assessment Administration Center (NAAC) prepared a list of Interviewer ID numbers and the number of package sets to be assigned to each. Using these specifications, 1,100 package assignment labels were generated, divided into 32 interviewer sets. The package assignment labels were delivered to NAAC on April 29 for use in preparation of the field materials.

Each label designated the set of three packages to be assigned to a respondent and prescribed the order of administration for the packages. A unique four-digit number was given to each label and served to identify the respondent to whom the package set was administered. Package sets were to be assigned to respondents in the sequence of the label identification numbers.

The packaging protocol constraints yielded an unequal probability allocation of packages. For three-package respondents, the probability of assignment of packages 1-3 was .0667; the probability of assignment of packages 4-14 was .0727. For respondents who completed only one or two packages, the package assignment probabilities were much more unequal.

3.6 Support of Field Operations

Continuous support of the field operations was provided during the planning and conduct of the Year 11 Supplementary Frame assessment. The

major tasks and activities performed in support of field operations were as follows:

(A) Review and update the field instrument (Individual Screening Questionnaire);

(B) Production of package assignment labels;

(C) Participation in training for the Supplementary Frame assessment;

(D) Resolution of field questions regarding application of eligibility criteria and proper completion of field instrument;

(E) Review of completed field instruments.

## 3.7 Weight Computations

### 3.7.1 Program Development and Data Preparation

Recommendations for the Year 11 Supplementary Frame weight computations and nonresponse adjustments were submitted to National Assessment for review. After approval, programming specifications for computing the Year 11 weights were prepared and SAS computer programs were developed for implementation of the weighting procedures.

Data appropriate to computation of Supplementary Frame weights were assembled from the following sources:

(A) Age Class 3 in-school data files;

(B) Supplementary Frame assessment list acquisition records and sample selection records;

(C) Completed Individual Screening Questionnaires (ISQs);

(D) Scored Background Questionnaire/package file.

In preparation for weight computations, Individual Screening Questionnaire data were edited and reconciled with sampling records and the Background Questionnaire data.

### 3.7.2 Weights for School Discontinuers

Package weights were computed for the 556 out-of-school 17-year-olds assessed from the school discontinuer list sample as follows:

$W_{ijk(\alpha)}$ = weight applicable to package-$\alpha$ responses given by discontinuer respondent-k of school-j of PSU-i;

$$= \frac{1}{P(\text{Discontinuer-ijk})} \quad \frac{1}{F_{ij}} \quad \frac{1}{C_{r,s}} \quad \frac{1}{P_{ij}} \quad \frac{1}{A_i} \quad \frac{1}{Z_r} \quad \frac{1}{P(\alpha)}$$

(A) (B) (C) (D) (E) (F) (G)

Definitions and computational procedures for the seven terms of the weight expression follow:

(A) P(Discontinuer-ijk) = overall sample inclusion probability for discontinuer-k of school-j of PSU-i;

= P(PSU-i)·P(School-j|PSU-i)·(0.5)·$D_j$ ·P(Discontinuer-k|School-j), where

P(PSU-i) = probability of selecting PSU-i for the Year 11 in-school primary sample;

P(School-j|PSU-i) = probability of selecting school-j for the Year 11 in-school assessment, given the selection of PSU-i;

0.5 = probability of selecting school-j for the Supplementary Frame sample, given its selection for the Year 11 in-school sample;

$D_j$ = probability that the alphabet sector containing discontinuer-ijk's name was listed by school-j; for a few Supplementary Frame sample schools with anticipated large numbers of discontinuers, listing was done for only half the alphabet, based on discontinuers' last names;

$$= \begin{cases} 1.0 \text{ if school-j listed entire alphabet;} \\ 0.5 \text{ if school-j listed a random half of the alphabet;} \end{cases}$$

P(Discontinuer-k|School-j) = probability of selecting discontinuer-k from the lists provided by school-j of PSU-i, given the selection of school-j for the Supplementary Frame sample;

$= \frac{n_{ij}}{N_{ij}}$, where

$n_{ij}$ = number of discontinuers selected from school-j for the Supplementary Frame sample;

$N_{ij}$ = number of potentially eligible discontinuers identified from lists provided by school-ij.

The weight terms involving the factors $F_{ij}$, $C_{r,s}$, $P_{ij}$, $A_i$, and $Z_r$ are adjustments for various levels of nonresponse, as follows:

(B) $F_{ij}$ = estimated proportion of school-ij's 1977-80 potentially eligible discontinuers covered by the lists provided by the school; discontinuer lists were requested for the three academic years 1977-78, 1978-79, and 1979-80, but some schools did not submit lists for all three school years;

$$= \sum_{p=1}^{3} I_p B_p \text{ , where}$$

$I_p$ = 1 if school-ij responded for academic year-p (year 1 = 1977-78, year 2 = 1978-79, and year 3 = 1979-80) by either providing a list of discontinuers or reporting that their records contained no potentially eligible discontinuers for that year;

0 otherwise, and

$B_p$ = the unweighted proportion of sample schools' 1977-80 potentially eligible discontinuers who left school during academic year-p (computed using only the data from sample schools providing complete information);

$$= \frac{\sum_{ij} J_{ij} X_{ij}}{\sum_{ij} J_{ij} Y_{ij}} \text{ , where}$$

$J_{ij}$ = 1 if school-ij responded for all three academic years by either providing discontinuer lists or stating that their records contained no potentially eligible discontinuers, i.e.,

if $\sum_{p=1}^{3} I_p = 1$ for school-ij;

0 otherwise

$X_{ij}$ = number of potentially eligible discontinuers identified in school-ij who left school during academic year-p;

$Y_{ij}$ = total number of potentially eligible discontinuers identified from lists from school-ij.

The values of $B_p$ calculated from the sample schools' data and used in computing the Year 11 weights are as follows:

| Academic year-p | 1(1977-78) | 2(1978-79) | 3(1979-80) | Total |
|---|---|---|---|---|
| Value of $B_p$ | 0.136 | 0.368 | 0.496 | 1.000 |

(C) $C_{r,s}$ = the estimated proportion of potentially eligible discontinuers in region-r, SOC-s who are from schools which would participate for the in-school assessment and the Supplementary Frame assessment;

$$= \frac{M_{r,s}}{N_{r,s}} \text{, where}$$

$$M_{r,s} = \sum_{i \in r,s} \sum_{j} \frac{J_{ij} \cdot H_{ij}}{P(\text{School-ij})} \text{, and}$$

$$J_{ij} = \begin{cases} 1 & \text{if sample school-ij responded for the Supplementary Frame dropout list acquisition;} \\ 0 & \text{otherwise} \end{cases}$$

$H_{ij}$ = number of 17-year-olds in school-ij, estimated from total enrollment and grade range;

$$P(\text{School-ij}) = P(\text{PSU-i}) \cdot P(\text{School-j} | \text{PSU-i}) \cdot (0.5)$$

$$N_{r,s} = \sum_{i \in r,s} \sum_{j} \frac{H_{ij}}{P(\text{School-ij})} .$$

In Year 11 there were five levels of SOC for each of the four regions, hence, there were 20 r,s-combinations. The computed $C_{r,s}$ values are shown in table 3-2.

Table 3-2. Values of $C_{r,s}$, school nonresponse adjustment by region and SOC

| Region (r) | SOC (s) 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Northeast (1) | 1.0000 | .6134 | .8116 | 1.0000 | 1.0000 |
| Southeast (2) | .7649 | .5317 | 1.0000 | 1.0000 | 1.0000 |
| Central (3) | 1.0000 | .9808 | .9921 | .9696 | .8765 |
| West (4) | .8296 | 1.0000 | .8843 | .6644 | 1.0000 |

(D) $P_{ij}$ = proportion of sample discontinuers from school-ij for whom eligibility status was determined;

$$= \frac{\sum_{k \in j} I_{ijk}}{n_{ij}} \text{, where}$$

$$I_{ijk} = \begin{cases} 1 & \text{if eligibility status was determined for discontinuer-ijk;} \\ 0 & \text{otherwise} \end{cases}$$

$n_{ij}$ = number of potentially eligible discontinuers selected from school-ij;

(E) $A_i$ = estimated proportion of potentially eligible discontinuers in PSU-i who are in schools for which eligibility status could be determined for some discontinuer;

$$= \frac{Q_i}{R_i} \text{, where}$$

$$Q_i = \sum_{j,k \in i} \frac{K_{ijk}}{P(\text{Discontinuer-ijk}) \cdot F_{ij} \cdot C_{r,s}} \text{, and}$$

$$K_{ijk} = \begin{cases} 1 & \text{if } P_{ij} > 0, \text{ i.e., if eligibility status was determined for some discontinuer from school-ij;} \\ 0 & \text{otherwise} \end{cases}$$

$P(\text{Discontinuer-ijk})$, $F_{ij}$ and $C_{r,s}$ are as previously defined, and

$$R_i = \sum_{j,k \in i} \frac{1}{P(\text{Discontinuer-ijk}) \cdot F_{ij} \cdot C_{r,s}} .$$

(F) $Z_r$ = estimated proportion of eligible discontinuers in region-r who would complete one or more NAEP packages;

$$= \frac{X_r}{Y_r} \text{ , where}$$

$$X_r = \sum_{i \in r} \sum_{j,k} \frac{V_{ijk} \cdot E_{ijk}}{P(\text{Discontinuer-ijk}) \cdot F_{ij} \cdot C_{r,s} \cdot P_{ij} \cdot A_i} \text{ , and}$$

$$V_{ijk} = \begin{cases} 1 & \text{if discontinuer-ijk was determined to be eligible;} \\ 0 & \text{otherwise} \end{cases}$$

$$E_{ijk} = \begin{cases} 1 & \text{if discontinuer-ijk was determined to be eligible and completed one or more NAEP packages;} \\ 0 & \text{otherwise} \end{cases}$$

$P(\text{Discontinuer-ijk})$, $F_{ij}$, $C_{r,s}$, $P_{ij}$ and $A_i$ are as previously defined; and

$$Y_r = \sum_{i \in r} \sum_{j,k} \frac{V_{ijk}}{P(\text{Discontinuer-ijk}) \cdot F_{ij} \cdot C_{r,s} \cdot P_{ij} \cdot A_i} \text{ .}$$

(G) $P(\alpha)$ = probability that respondent discontinuer-ijk would complete package-$\alpha$ ($\alpha = 1,\ldots,14$), given that he completed C packages (C = 1, 2, or 3); these probabilities are shown in the table below;

| Package No. ($\alpha$) | $P(\alpha)\|C$ C = 1 | C = 2 | C = 3 |
|---|---|---|---|
| 1 - 3 | 1/5 | 1/5 | 1/5 |
| 4-11, 13, 14 | 3/110 | 3/110 | 12/55 |
| 12 | 7/55 | 12/55 | 2/55 |

A school weight, $U_{ijk}$, was also computed for each discontinuer respondent as follows:

$$U_{ijk} = \frac{1}{P(\text{Discontinuer-ijk})} \cdot \frac{1}{F_{ij}} \cdot \frac{1}{C_{r,s}} \cdot \frac{1}{P_{ij}} \cdot \frac{1}{A_i} \cdot \frac{1}{Z_r} \text{ , where}$$

terms of the weight expression are as previously defined. The school

weights are those appropriate for weighting data collected uniformly from all respondents, such as Background Questionnaire data.

3.7.3 Weights for Early Graduates

Package weights were computed for the 95 out-of-school 17-year-olds assessed from the early graduate list sample as follows:

$W_{ijk(\alpha)}$ = weight applicable to package-$\alpha$ responses given by respondent early graduate-k of school-j of PSU-i;

$$= \underbrace{\frac{1}{P(\text{Graduate-ijk})}}_{(A)} \cdot \underbrace{\frac{1}{C}}_{(B)} \cdot \underbrace{\frac{1}{P_{ij}}}_{(C)} \cdot \underbrace{\frac{1}{A}}_{(D)} \cdot \underbrace{\frac{1}{Z_r}}_{(E)} \cdot \underbrace{\frac{1}{P(\alpha)}}_{(F)}$$

The terms of the weight expression are generally analagous to those used for computing discontinuer weights, but computational procedures vary for some of the terms. Definitions of the weight expression terms follow:

(A) $P(\text{Graduate-ijk})$ = overall sample inclusion probability for early graduate-k of school-j of PSU-i;

$$= P(\text{PSU-i}) \cdot P(\text{School-j}|\text{PSU-i}) \cdot (0.5) \cdot D_j \cdot P(\text{Graduate-k}|\text{School-j});$$ where

$P(\text{PSU-i})$ = probability of selecting PSU-i for the Year 11 in-school primary sample;

$P(\text{School-j}|\text{PSU-i})$ = probability of selecting school-j for the Year 11 in-school assessment, given the selection of PSU-i;

$0.5$ = probability of selecting school-j for the Supplementary Frame sample, given its selection for the Year 11 in-school sample;

$D_j$ = probability that school-j was asked to provide lists containing graduate-k's name; small schools were asked to list all early graduates; large schools were asked to provide lists of early graduates whose last names were contained within two randomly selected alphabet sectors from the following four: A-D, E-K, L-R, S-Z;

$$= \begin{cases} 1.0 & \text{if school-j listed entire alphabet;} \\ 0.5 & \text{if school-j listed a random half of the alphabet;} \end{cases}$$

$$P(\text{Graduate-k}|\text{School-ij}) = \frac{n_{ij}}{N_{ij}}, \text{ where}$$

$n_{ij}$ = number of early graduates selected from school-ij for the Supplementary Frame sample;

$N_{ij}$ = number of potentially eligible early graduates identified from lists provided by school-ij;

None of the responding schools reported only partial screening for early graduates in the specified period (January 1, 1978 to beginning of Age Class 3 assessment in PSU), so the weight adjustment term for incomplete response, $F_{ij}$, was not required.

(B) $C$ = the estimated proportion of potentially eligible early graduates who are from schools which would participate for the in-school assessment and the Supplementary Frame assessment;

$$= \frac{M}{N}, \text{ where}$$

$$M = \sum_{i,j} \frac{J_{ij} \cdot H_{ij}}{P(\text{School-ij})}, \text{ and}$$

$$J_{ij} = \begin{cases} 1 & \text{if sample school-ij responded for the Supplementary Frame early graduate list acquisition;} \\ 0 & \text{otherwise.} \end{cases}$$

$H_{ij}$ = number of 17-year-olds in school-ij estimated from total enrollment and grade range; this quantity was used as a proxy measure for the number of potentially eligible early graduates in computing the nonresponse adjustment;

$$P(\text{School-ij}) = P(\text{PSU-i}) \cdot P(\text{School-j}|\text{PSU-i})(0.5)$$

$$N = \sum_{i,j} \frac{H_{ij}}{P(\text{School-ij})}$$

(C) $P_{ij}$ = proportion of sample early graduates from school-ij for whom eligibility status was determined;

$$= \frac{\sum_{k \in j} I_{ijk}}{n_{ij}} \text{ , where}$$

$$I_{ijk} = \begin{cases} 1 & \text{if eligibility status was determined for early graduate-ijk;} \\ 0 & \text{otherwise} \end{cases}$$

$n_{ij}$ = number of potentially eligible early graduates selected from school-ij;

(D) $A$ = estimated proportion of early graduates who are in schools for which eligibility status could be determined for some early graduate;

$$= \frac{Q}{R} \text{ , where}$$

$$Q = \sum_{i,j,k} \frac{K_{ijk}}{P(\text{Graduate-ijk}) \cdot C} \text{ , and}$$

$$K_{ijk} = \begin{cases} 1 & \text{if } P_{ij} > 0 \text{ for school-ij, i.e., if eligibility status was determined for some sample early graduate from school-ij;} \\ 0 & \text{otherwise} \end{cases}$$

P(Graduate-ijk) and C are as previously defined, and

$$R = \sum_{i,j,k} \frac{1}{P(\text{Graduate-ijk}) \cdot C} \text{ .}$$

(E) $Z_r$ = estimated proportion of eligible early graduates in region-r who would complete one or more NAEP packages;

$$= \frac{X_r}{Y_r} \text{ , where}$$

$$X_r = \sum_{i \in r} \sum_{j,k} \frac{V_{ijk} \cdot E_{ijk}}{P(\text{Graduate-ijk}) \cdot C \cdot P_{ij} \cdot A} \text{ , and}$$

$$V_{ijk} = \begin{cases} 1 & \text{if graduate-ijk was determined to be eligible;} \\ 0 & \text{otherwise.} \end{cases}$$

$$E_{ijk} = \begin{cases} 1 & \text{if graduate-ijk was determined to be eligible and completed one or more NAEP packages;} \\ 0 & \text{otherwise.} \end{cases}$$

The remaining terms in the computational expression for $X_r$ are as previously defined; and

$$Y_r = \sum_{i \in r} \sum_{j,k} \frac{V_{ijk}}{P(\text{Graduate-}ijk) \cdot C \cdot P_{ij} \cdot A} .$$

(F) $P(\alpha)$ = probability that respondent early graduate-ijk would complete package-$\alpha$, given that he completed C packages (C = 1, 2, 3), as previously defined.

A school weight, $U_{ijk}$, was also computed for each early graduate respondent as follows:

$$U_{ijk} = \frac{1}{P(\text{Graduate-}ijk)} \quad \frac{1}{C} \quad \frac{1}{P_{ij}} \quad \frac{1}{A} \quad \frac{1}{Z_r} \quad , \text{ where}$$

terms of the expression are as previously defined. The school weights are those appropriate for weighting data collected uniformly from all respondents, such as Background Questionnaire data.

3.7.4 Weight Editing and Tape Preparation

The computational sequence for obtaining final weights for discontinuers and early graduates consisted of several steps, as follows:

(A) Computation of school weights adjusted for incomplete school responses and nonparticipating schools;

(B) Computation of school weights adjusted as in (A), and adjusted for nondetermination of eligibility status for some sample individuals;

(C) Computation of final school weights adjusted as in (A) and (B), and adjusted for nonparticipation of some eligible individuals;

(D) Computation of final package weights from final school weights.

The weights computed in each step of the sequence were edited before proceeding with the next step to assure the accuracy of the submitted weights. Randomly selected weights at each step were verified as having been correctly computed by reproducing the calculations by hand. All

atypically large weights were similarly verified. Listings, frequency tabulations and summary statistics were obtained for final school and package weights. All discontinuer package weights exceeding 10,000 were identified and reasons for their unusual sizes were documented; there were no atypically large early graduate weights. Large weights were generally due to lower than usual within-school selection rates and/or respondents who completed only one or two of the assessment packages.

The Supplementary Frame weight tape was prepared in accordance with the format established by RTI, National Assessment and Westinghouse Data-Score Systems (WDSS) for reporting all Year 11 weights. A backup copy of the tape was prepared for retention at RTI, and the weight tape was sent to WDSS on October 10, 1980. Concurrently, appropriate documentation and summary tabulations were delivered to National Assessment.

3.7.5 Level of the Estimates

Population totals for out-of-school 17-year-old discontinuers and early graduates were estimated by summing the Year 11 Supplementary Frame assessment adjusted school weights for respondents, and these estimates are shown in table 3-3 with results from preceding years. Also presented in the table are Census-based estimates of the survey populations and the proportions of the populations estimated by the survey data.

The Year 11 survey estimate of the discontinuer frame out-of-school 17-year-old population, 305,075, is 47.2 percent above the estimate obtained in the last Supplementary Frame assessment conducted in 1976 (Year 07). This increase results directly from a significant rise in the average number of discontinuers reported by participating schools, from 19.2 in Year 07 to 36.3 in Year 11. Since there is no evidence that the discontinuer population has shown an actual increase over this period, the

Table 3-3. Supplementary Frame survey estimates of population and Census-based population estimates, by assessment year

| | Assessment Year | | | |
|---|---|---|---|---|
| | 05 (1974) | 06 (1975) | 07 (1976) | 11 (1980) |
| Survey estimates: | | | | |
| 17-year-old Discontinuers | 233,532 | 223,908 | 197,588 | 305,075 |
| 17-year-old Early Graduates | 16,540 | 15,285 | 16,489 | 10,024 |
| Total out-of-school 17-year-olds | 250,072 | 239,193 | 214,077 | 315,100 |
| Census estimates: | | | | |
| 17-year-olds (000's)[1/] | 4,241 | 4,175 | 4,280 | 4,100 |
| Eligible out-of-school 17-year-olds[2/] | 386,779 | 380,760 | 390,336 | 373,920 |
| Proportion of eligible population estimated by Supplementary Frame data | 0.647 | 0.628 | 0.548 | 0.843 |

1/ From Current Population Reports, Population Characteristics, Series P-20.

2/ Computed as (Census 17 yr.-olds) x 0.095 x 0.96, where 0.095 is the estimated proportion of 17-year-olds not enrolled in grades K-12 in the period 1974-1980, and 0.96 is the estimated proportion of 17-year-olds eligible for National Assessment.

larger average number of names listed could be due to better record keeping by the schools and more thorough list preparation for Supplementary Frame.

The Year 11 survey estimate of the early graduate frame out-of-school 17-year-old population was 10,024, 39.2 percent below the Year 07 estimate. However, the unweighted average number of early graduates reported by participating schools showed very little change between Year 07 and Year 11. Since early graduate survey estimates are based on very small samples, the observed year to year differences are likely within the range of sampling error.

The estimated total out-of-school 17-year-old population from the Year 11 survey, 315,100, is 84 percent of the Census based estimate and represents the highest estimated level of coverage for any of the Supplementary Frame surveys.

3.8 DOC, TOC, and STOC Classification

No separate determination of DOC, TOC, and STOC was made for Supplementary Frame respondents. Rather, the out-of-school 17-year-olds selected from a particular school were given the same DOC-TOC-STOC categorization as the respondents for the Age Class 3 in-school assessment in that school. The DOC-TOC-STOC determination for Year 11 in-school respondents is discussed in Chapter 2 of this report.

3.9 Response Experience

Response experience data for the Year 11 Supplementary Frame sample schools are presented in table 3-4, while response experience for sample discontinuers and early graduates appear in table 3-5.

A total of 209 NAEP Age Class 3 schools were asked to participate for the Supplementary Frame assessment. As shown in table 3-4, two of the schools asked, or 1.0 percent, refused to provide discontinuer lists or

Table 3-4. Year 11 Supplementary Frame list acquisition results

| Sample | Year 11 Number | Year 11 Percent | Year 07 Percent |
|---|---|---|---|
| Discontinuer Sample | | | |
| Schools asked to provide discontinuer lists | 209 | 100.0 | 100.0 |
| Refused to provide lists | 2 | 1.0 | 5.7 |
| Participating schools | 207 | 99.0 | 94.3 |
| Reported "No eligible discontinuers" | 33 | 15.8 | 28.3 |
| Provided discontinuer lists | 174 | 83.3 | 66.1 |
| Early graduate sample | | | |
| Schools asked to provide early graduates lists | 205 | 100.0 | 100.0 |
| Refused to participate | 2 | 1.0 | 11.1 |
| Participating schools | 203 | 99.0 | 88.9 |
| Reported "No eligible early graduates" | 147 | 71.7 | 67.1 |
| Provided early graduate lists | 56 | 27.3 | 21.8 |

Table 3-5. Year 11 Supplementary Frame assessment field results with comparative percentage results for Year 07

| | Year 11 | | | | Year 07 |
|---|---|---|---|---|---|
| | Discontinuers | Early Grads. | Total Sample No. | Total Sample % | % |
| Total Sample Persons | 965 | 131 | 1,096 | 100.0 | 100.0 |
| Persons with eligibility status undetermined | 88 | 4 | 92 | 8.4 | 12.7 |
| Refused to provide screening information or uncooperative on all callbacks | 6 | 1 | 7 | 0.6 | 1.7 |
| Could not locate or contact | 82 | 3 | 85 | 7.8 | 11.0 |
| Persons determined not eligible | 237 | 15 | 252 | 23.0 | 18.7 |
| Ineligible birthdate or enrolled at assessment date | 216 | 11 | 227 | 20.7 | 16.5 |
| Not living in U.S., mentally or physically incapable, non-English speaking or nonreader | 21 | 4 | 25 | 2.3 | 2.3 |
| Persons determined eligible | 640 | 112 | 752 | 68.6 | 68.6 |
| Refused to participate or uncooperative on all calls | 45 | 15 | 60 | 5.5 | 5.0 |
| Could not locate or contact | 39 | 2 | 41 | 3.7 | 4.1 |
| Package respondents | 556 | 95 | 651 | 59.4 | 59.5 |
| Packages completed | 1,635 | 281 | 1,916 | | |
| Packages per respondent | | | 2.94 | | |

reported that the necessary records were not available. There were also 20 schools selected in the initial Supplementary Frame subsample which were not asked to participate for list acquisition due to their refusal for the in-school assessment (table 3-1). The overall school nonparticipation rate for Year 11, therefore was

$$\left(\frac{2 + 20}{20 + 209} \times 100\right) = \left(\frac{22}{229} \times 100\right) = 9.6\% .$$

Of the 207 schools which agreed to participate, 33, or 15.9 percent, reported that their records disclosed no age eligible discontinuers for the period specified, i.e., submitted empty lists, while the remaining 174 schools, or 84.1 percent of those participating, provided nonempty lists of discontinuers for at least one school year. A total of 7,081 potentially eligible discontinuers was identified from the lists submitted.

There were 205 Supplementary Frame sample schools asked to participate which had twelfth grades, and these schools were asked to provide both discontinuer and early graduate lists. As shown in table 3-4, two schools, or 1.0 percent, refused to search their records for the early graduates or reported that the necessary records were not available. When refusals for in-school assessment are considered, the overall school nonparticipation rate for the early graduate phase of the study was:

$$\left(\frac{20 + 2}{205 + 20} \times 100\right) = \left(\frac{22}{225} \times 100\right) = 9.8\% .$$

Of the 203 schools which agreed to participate, 147, or 72.4 percent, reported that their records disclosed none of the scarce age-eligible early graduates within the specified alphabet sectors. Nonempty lists were received from 56 study schools, and these schools listed a total of 172 potentially eligible early graduates.

Table 3-5 presents the final results from the field location, screening, and package administration. The sample was comprised of 965 potentially eligible discontinuers and 131 early graduates, or 1,096 sample individuals in total. For 92, or 8.4 percent, of those in the sample, interviewers were unable to obtain eligibility screening information. Failure to locate or contact the sample individual or a close family member accounted for 85, or 92.4 percent, of these cases. A total of 252 individuals, 23.0 percent of those in the sample, were determined to be ineligible for assessment. In 227, or 90.1 percent of these cases, ineligibility was due to an out-of-range birthdate or to enrollment in school during the time of Year 11 Age Class 3 in-school assessment. The 252 individuals categorized as ineligible represent 25.1 percent of the 1,004 sample persons for whom eligibility screening was completed. A total of 752 individuals were determined to be eligible for the assessment, and 651, or 86.6 percent, of these participated. Nonparticipation was due to refusals in 60 cases, while failure to locate the individual accounted for the balance of the nonparticipating eligible individuals. The 651 participants represent 59.4 percent of all sample individuals, this result is almost identical to the Year 07 overall rate of participation.

The desired package yield was 125 responses for each of the 14 packages, or approximately 1,750 completed packages, in total. Table 3-6 presents the number of responses obtained in the Supplementary Frame assessment for the 14 Age Class 3 packages, by sampling frame. Actual survey response was 1,916 completed packages, or an average of 136.9 responses per instrument--a yield 9.5 percent above the design goal. The package overage is primarily attributable to the higher-than-anticipated level of participation achieved in the study--59.4 percent achieved versus 55.0 percent estimated in pre-survey planning.

Table 3-6. Year 11 Supplementary Frame assessment package sample size by student sampling frame

| Package | Discontinuer frame responses | Early graduate frame responses | Total responses |
|---|---|---|---|
| 1 | 114 | 18 | 132 |
| 2 | 111 | 19 | 130 |
| 3 | 104 | 25 | 129 |
| 4 | 110 | 29 | 139 |
| 5 | 120 | 21 | 141 |
| 6 | 120 | 22 | 142 |
| 7 | 125 | 12 | 137 |
| 8 | 112 | 21 | 133 |
| 9 | 121 | 20 | 141 |
| 10 | 116 | 21 | 137 |
| 11 | 119 | 24 | 143 |
| 12 | 123 | 15 | 138 |
| 13 | 120 | 15 | 135 |
| 14 | 120 | 19 | 139 |
| Total | 1,635 | 281 | 1,916 |

3.10 Special Problems and Recommendations

There were no special problems encountered during conduct of the Supplementary Frame sampling and weighting activities.

Based on Year 11 experience, the following recommendations are made for future Supplementary Frame sampling:

(A) The iterative procedure described in section 3.4 for adjusting the student sample allocations to PSUs throughout list collection so as to achieve the desired total sample size should be employed.

(B) Students who leave school during March or April of the current assessment year should be deleted from the sampling frame as ineligible (enrolled during March or April). Such students were included in the frame for Year 11, since it was thought that schools might tend to retain discontinuers on rolls some time past their actual date of leaving school, but Year 11 field results did not show this to be the case. Sample discontinuers with March or April dates left school were almost always classified as ineligible during screening by virtue of a "yes" answer to the question, "Where you enrolled in....school anytime during March or April, 1980".

(C) Almost 25 percent of the schools from whom lists were received reported 50 or more discontinuers. If Supplementary Frame sample size requirements are not substantially increased in future assessments, provision should be made to allow subsampling by alphabet sectors for discontinuer list compilation, as is done for early graduates.

APPENDIX A

Year 11 Principal's Questionnaire

O.M.B. No. 051-R-1[illegible]
Approval Expires 9/30/81

A-1

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS
A PROJECT OF THE EDUCATION COMMISSION OF THE STATES

# SCHOOL PRINCIPAL'S QUESTIONNAIRE

This report is authorized by law (20 U.S.C. 1221 c-1). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

Primary Sampling Unit ☐☐ School Number ☐☐☐☐☐☐☐☐☐

Group(s) 9-Yr-Olds 13-Yr-Olds 12th Graders

PLEASE PRINT

Name of School _____

Address of School _____
(Street)

_____
(City) (State) (Zip Code)

Name of School Principal _____

Name and title of person completing the form if other than school principal

Name _____ Title _____

1. What is your best estimate of the current enrollment and the average daily attendance by grade of your school (1978-79 school year)? (Enter zeros for grades not served by your school.)

| Grade | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Enrollment | | | | | | | | | | | | | |
| Average Daily Attendance | | | | | | | | | | | | | |

2. Approximately what percentage of the students attending your school live in each of the following areas?

____% A In a rural area (less than 2,500)

____% B In a town of 2,500 to 10,000

____% C In a town of 10,000 or more

____ (Items A-C should add to 100%)
100%



(over on the other side)

3. Approximately what percentage of the students attending your school are children of

_____% A Professional or managerial personnel

_____% B Sales, clerical, technical or skilled workers

_____% C Factory or other blue collar workers

_____% D Farm workers

_____% E Persons not regularly employed

_____% F Persons on welfare

_____ (Items A-F should add to 100%)
100%

4. Approximately what percentage of the students attending your school are

_____% A American Indian or Alaskan Native

_____% B Asian or Pacific Is[illegible]r

_____% C Hispanic, regardless of race (Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin)

_____% D Black and not Hispanic

_____% E White and not Hispanic

_____ (Items A-E should add to 100%)
100%

5. Does your school qualify for ESEA Title I assistance?

_____ Yes - If Yes, approximately what number of students qualify for and what number of students are receiving ESEA Title I assistance?

_____ Approximate number of students qualifying for ESEA Title I assistance

_____ Approximate number of students receiving ESEA Title I assistance

_____ No

THANK YOU FOR YOUR COOPERATION

APPENDIX B

Year 11 School Worksheet

B-1
SCHOOL WORKSHEET

(Complete for each school for which you receive a Package Assignment Form)

PSU Number _____ School Number _____

Complete Parts A - D only after crossing out names of students listed on the SLF who are ineligible for any reason.

A. How many students were identified by the school as:

1. Non-English speaking? _____ 2. EMR? _____ 3. Functionally disabled? _____

B. How many names were crossed out for students:

1. With out-of-range birthdates? _____ 2. No longer enrolled? _____

3. Who were ineligible for any other reason(s)? _____ (Specify reason(s) in Part F.)

C. What was the source used to complete SLF? _____

D. Sampling

1. Subsampling not used:

a. Total count of eligible students listed on SLF _____

2. Subsampling used:

a. Total count of eligible students listed on SLF a. _____

b. Enter sampling interval from Item 2 of Package Assignment Form b. _____

c. Multiply Item a. by Item b. c. _____

E. Complete after packages have been administered in the school.

| Pkg. No. | No. Completed | Pkg. No. | No. Completed | Pkg. No. | No. Completed | Pkg. No. | No. Completed |
|---|---|---|---|---|---|---|---|
| ____ | _____ | ____ | _____ | ____ | _____ | ____ | _____ |
| ____ | _____ | ____ | _____ | ____ | _____ | ____ | _____ |
| ____ | _____ | ____ | _____ | ____ | _____ | ____ | _____ |

F. Indicate any problems related to sampling or obtaining quorums. Explain in full when an assigned package administration is not given. Indicate self-identified nonreaders by package and ID numbers. (If additional space is needed, continue on a separate sheet and attach to RTI copies.)

_____

_____

_____

_____

_____

_____

_____

_____

G. Coordinator _____

District Supervisor: _____ Date Completed: _____

Disposition: White copy to MRC; yellow and pink copies to RTI immediately upon completion of all work in the PSU; goldenrod copy retained by DS.

APPENDIX C

Year 11 Weight Tape Format

National Assessment of Educational Progress
Year 11 Weight Tape Format
(Prepared 12/27/79)

| Location | Name | Description |
|---|---|---|
| 1 | AGE | Age Group Code: 1 9-year-olds<br>2 13-year-olds<br>3 17-year-olds<br>3 Supplementary Frame |
| 2-3 | PACKAGE | Package Number: 01,02...,10,11,12,13,14,15 |
| 4-6 | PSUID | PSU Number: (3-digit) Obtained as leading zero and 2-digit PSU number. |
| 7-8 | SCHOOL | School Number: (2-digit) Age Group 1=01-29<br>Age Group 2=31-59<br>Age Group 3=61-89 |
| 9 | PSUSCHC | Check Digit: (1-digit) Check digit is a function of 2-digit PSU and 2-digit school number. |
| 10 | INOUT | Supplementary Frame tape type indicator: 0 9's,13's,17's in schoo<br>1 Supplementary Frame |
| 11-14 | STUDID | Assessee Number: 0000 9's,13's,17's in school<br>>0000 Supplementary Frame |
| 15 | | Zero (0). |
| 16 | STOC | STØC:[1] 1 Extreme rural<br>2 Low metro<br>3 High metro<br>4 Main big city<br>5 Urban fringe<br>6 Medium city<br>7 Small place |
| 17-19 | COUNTY | County (1970 FIPS code): >000 |

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[1] TOC may be obtained from STOC as follows:

| TOC: | | STOC: | |
|---|---|---|---|
| 1 | Extreme rural | 1 | Extreme rural |
| 2 | Low metro | 2 | Low metro |
| 3 | High metro | 3 | High metro |
| 4 | Others | 4 | Main big city |
| | | 5 | Urban fringe |
| | | 6 | Medium city |
| | | 7 | Small place |

| Location | Name | Description |
|---|---|---|
| | | See Federal Information Processing Standards Publication (FIPS PUB 6-1), Counties and County Equivalents of the States of the United States, U. S. Department of Commerce, National Bureau of Standards, June 15, 1970. |
| 20-24 | ZIPCODE | ZIP Code: >00000 |
| 25-26 | GRDLOW | Lowest Grade in School:[2/] 00,01,...,11,12; 00 = kindergarten, 01 = 1st grade, 02 = 2nd grade, etc. |
| 27-28 | GRDHIGH | Highest Grade in School:[2/] 00,01,...,11,12; 00 = kindergarten, 01 = 1st grade, 02 = 2nd grade, etc. |
| 29-34 | PSU | PSU number: (6-digit), Six-digit PSU number is included because (1) it is the only place where sampling size of community (SOC) is reported; and (2) it will provide similar PSU numbers when comparing data across years. |
| | | School Principal's Questionnaire Question 1: What is your best estimate of the average daily attendance by grade of your school (1978-79 school year)? |
| 35-37 | PRINØ1A | Kindergarten |
| 38-40 | PRINØ1B | 1st grade |
| 41-43 | PRINØ1C | 2nd grade |
| 44-46 | PRINØ1D | 3rd grade |
| 47-49 | PRINØ1E | 4th grade |
| 50-52 | PRINØ1F | 5th grade |
| 53-55 | PRINØ1G | 6th grade |

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[2/] A grade range will be supplied for every school. In most cases, the grade range is obtained from the Principal's Questionnaire. In those rare instances -- where this information is not provided on the Principal's Questionnaire, the data are imputed from education directories.

| Special cases | Location 25-26 | Location 27-28 |
|---|---|---|
| A school having 6th grade only | 06 | 06 |
| A school with split grade range of 1-3 and 5-6 | 01 | 06 |

| Location | Name | Description |
|---|---|---|
| 56-58 | PRINØ1H | 7th grade |
| 59-61 | PRINØ1I | 8th grade |
| 62-64 | PRINØ1J | 9th grade |
| 65-67 | PRINØ1K | 10th grade |
| 68-70 | PRINØ1L | 11th grade |
| 71-73 | PRINØ1M | 12th grade |
| | | Average daily attendance is reported to nearest percent. Locations 35 through 73 are zero if average daily attendance is not reported. |
| | | School Principal's Questionnaire Question 2: Approximately what percentage of students attending your building live in each of the following areas: 3/ |
| 74-76 | PRINØ2A | Rural area (less than 2,500) |
| 77-79 | PRINØ2B | Town of 2,500 to 10,000 |
| 80-82 | PRINØ2C | Town of 10,000 or more |
| | | Sum of values is 100. |
| | | School Principal's Questionnaire Question 3: Approximately what percentage of the students attending your building are children of 3/ |
| 83-85 | PRINØ3A | Professional or managerial personnel |
| 86-88 | PRINØ3B | Sales, clerical, technical, or skilled workers |
| 89-91 | PRINØ3C | Factory or other blue collar workers |
| 92-94 | PRINØ3D | Farm workers |
| 95-97 | PRINØ3E | Not regularly employed |
| 98-100 | PRINØ3F | On welfare |
| | | Sum of values is 100. |

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3/ When this information is not supplied on the Principal's Questionnaire, it is imputed using Census data.

| Location | Name | Description |
|---|---|---|
| | | School Principal's Questionnaire Question 4: Approximately what percentage of the students attending your school are 3/ |
| 101-103 | PRINØ4A | American Indian or Alaskan Native |
| 104-106 | PRINØ4B | Asian or Pacific Islander |
| 107-109 | PRINØ4C | Hispanic, regardless of race ( Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin) |
| 110-112 | PRINØ4D | Black and not Hispanic |
| 113-115 | PRINØ4E | White and not Hispanic |
| | | Sum of values is 100. |
| | | School Principal's Questionnaire Question 5: Does your school qualify for ESEA Title I assistance? |
| 116 | PRINØ5A | 0 No response<br>1 Yes<br>2 No |
| | | If yes, approximately what number of students qualify for and what number of students are receiving ESEA Title I assistance? |
| 117-120 | PRINØ5B | Approximate number of students qualifying for ESEA Title I assistance. |
| 121-124 | PRINØ5C | Approximate number of students receiving ESEA Title I assistance. |
| 125 | STANDBY | Type of package: 0 Regular<br>1 Standby |
| 126-130 | SPOPCNT | Number of students in student sampling frame as reported on School Worksheet: 00000 Supplementary Frame<br>>00000 9's,13's, 17's in school |
| 131-139 | STSWGT | Reconciled regular assessment student-level school weight to be us when data file contains one record per student(F9.2); >000000000 |
| 140-148 | WEIGHTT | Reconciled regular assessment package weight (F9.2): >000000000 |
| 149-150 | ELIGCNT | Number of regular eligible respondents (i.e., respondents in correct age domain, non-EMR, English speaking, etc.) or number of eligible respondents to followup assessment.<br>00 Supplementary Frame<br>>00 All others |
| 151 | DOC | DØC: 1 Big city<br>2 Urban fringe<br>3 Medium city<br>4 Small place |

| Location | Name | Description |
|---|---|---|
| 152 | FRAME | Frame: 0 9's,13's,17's in school<br>2=b=Age Group 3 school dropout list frame<br>3=h=Early graduate list frame |
| 153-154 | STATE | State code (1970 FIPS code): >00 (For Supplementary Frame study, the State code was obtained from the school which provided the original dropout list.) See attachment for definition of State codes. |
| 155-159 | STOTCNT | School total enrollment: >00000 (For Supplementary Frame Study the total enrollment was obtained from the school which provided the original dropout list.) |
| 160 | SPUBPRV | Public/Private school code: (For Supplementary Frame Study, the public/private school code was obtained from the school which provided the original dropout list.)<br><br>1 = Public<br>2 = Private Catholic<br>3 = Private Non-Catholic |
| 161 | SES | Socioeconomic Status (SES) School code: (For Supplementary Frame Study, the SES code was obtained from the school which provided the original dropout list.)<br><br>1 = Low metropolitan for SOC 1,2,3 PSU; extreme rural for SOC 4,5 PSUs.<br>2 = Remainder of city for SOC 1,2,3 PSU; not applicable for SOC 4,5 PSUs.<br>3 = Remainder of PSU for all PSUs. |
| 162-165 | ISVARES | In-school variance estimation code for PSU-school. (For Supplementary Frame study, the in-school variance estimation code was obtained from the school which provided the original dropout list.<br><br>abbc where<br><br>a = PSU-school regional code (1, 2, 3, 4, 9)<br>bb = stratum within region<br>c = replicate within stratum and region.<br><br>PSU-schools with same region and stratum within region code are to be paired for variance estimation purposes. In some cases, there may be three members in the group. |
| 166 | REGOBE | Office of Business Economics (OBE) regional code by school. (For Supplementary Frame, the OBE regional code and Census regional codes were obtained from the school which provided the original dropout list.)<br><br>1 = North Atlantic<br>2 = Southeast |

| Location | Name | Description |
|---|---|---|
| | | 3 = Great Lakes and Plains<br>4 = West and Southwest<br>(See attachment for States in these regions.) |
| 167 | REGCEN | Census regional code by school:<br><br>1 = New England<br>2 = Middle Atlantic<br>3 = East North Central<br>4 = West North Central<br>5 = South Atlantic<br>6 = East South Central<br>7 = West South Central<br>8 = Mountain<br>9 = Pacific<br>(See attachment for States in these regions.) |
| 168-169 | INELCNT | Number of ineligible respondents to regular assessment (i.e., respondents in incorrect age domain, EMR, non-English speaking, etc.) or number of ineligible respondents to followup assessment.<br><br>00 Supplementary Frame<br>>00 |
| 170-176 | LEACODE | Local Education Agency (LEA) codes.[4/] A 7-digit code developed by the National Center for Education Statistics (NCES) which uniquely identifies public school districts within each State. (For private schools, LEA code is zero). The first two digits of the LEA code identify the State and the last 5 digits identify the district within the state. For Supplementary Frame Study, the LEA code is provided for the school which supplied the original dropout list.<br>>00'0000 |
| 177 | SEVENI | 0, if regular 17-year-old respondent or 9 or 13-year-old respondent;<br>1, if initial 17-year-old respondent;<br>2, if 17-year-old followup respondent. |
| 178-186<br>*length = 9* | SCHWGT | Reconciled regular assessment school-level school weight to be used when data file contains one record per school (F9.2): >00000( |
| Internal Labels: | | |
| DSN=RTI.WT.a.Yyy<br>where a=age | | N-9s<br>T-13s<br>I-17s In-school and nonrespondent followup<br>Ø-17s Supplementary Frame<br><br>yy = Assessment Year. |



[4/] For a list of these codes, see Universe of Operating and Non-operating

STATE CODES

OMITTED DUE TO CONFIDENTIALITY

## U.S. Office of Business Economics Regions

### North Atlantic (1)

Connecticut
Delaware
District of Columbia
Maine
Maryland
Massachusetts
New Hampshire
New Jersey
New York
Pennsylvania
Rhode Island
Vermont

### Southeast (2)

Alabama
Arkansas
Florida
Georgia
Kentucky
Louisiana
Mississippi
North Carolina
South Carolina
Tennessee
Virginia
West Virginia

### Great Lakes and Plains (3)

Illinois
Indiana
Iowa
Kansas
Michigan
Minnesota
Missouri
Nebraska
North Dakota
Ohio
South Dakota
Wisconsin

### West and Southwest (4)

Alaska
Arizona
California
Colorado
Hawaii
Idaho
Montana
Nevada
New Mexico
Oklahoma
Oregon
Texas
Utah
Washington
Wyoming

## Census Regions

New England (1)

Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

Middle Atlantic (2)

New Jersey
New York
Pennsylvania

East North Central (3)

Illinois
Indiana
Michigan
Ohio
Wisconsin

West North Central (4)

Iowa
Kansas
Minnesota
Missouri
Nebraska
North Dakota
South Dakota

South Atlantic (5)

Delaware
District of Columbia
Florida
Georgia
Maryland
North Carolina
South Carolina
Virginia
West Virginia

East South Central (6)

Alabama
Kentucky
Mississippi
Tennessee

West South Central (7)

Arkansas
Louisiana
Oklahoma
Texas

Mountain (8)

Arizona
Colorado
Idaho
Montana
Nevada
New Mexico
Utah
Wyoming

Pacific (9)

Alaska
California
Hawaii
Oregon
Washington

APPENDIX D

PSU Control Sheet

OMITTED DUE TO CONFIDENTIALITY

APPENDIX G

Age Class 3 Nonrespondent Form

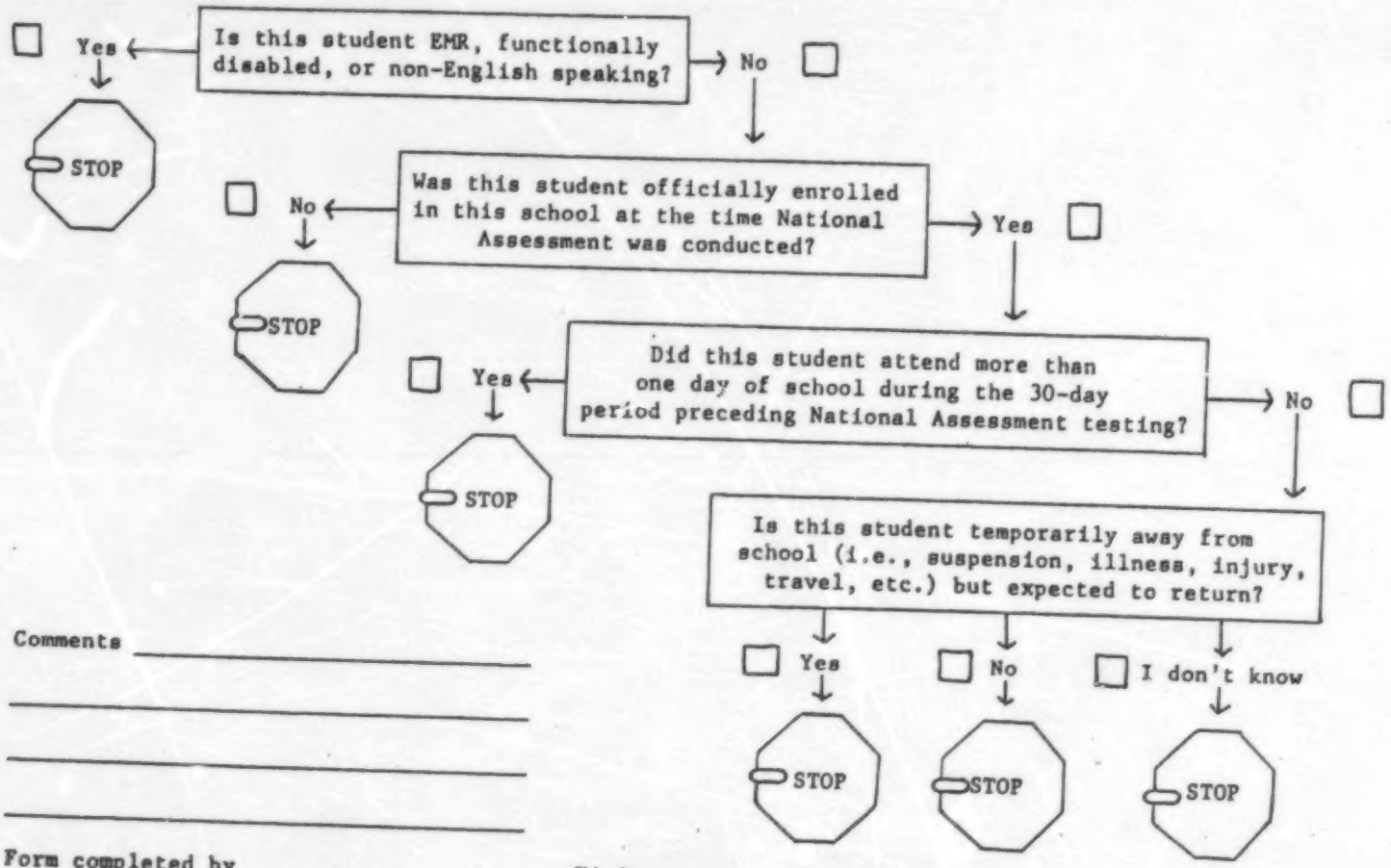
AGE CLASS 3 NONRESPONDENT FORM

Form Approved
FEDAC No. R 34
Approval Expires 12/81

PSU SCHOOL

Package number
Administration Schedule Letter
Line number

Please complete the diagram below concerning the student whose name appears on the label. Check the appropriate answer and follow the arrows until you reach a STOP sign. Shade the oval in the STOP sign with a no. 2 pencil. Please explain any unusual situations in the comments section.


Is this student EMR, functionally disabled, or non-English speaking?
Yes
No
STOP
Was this student officially enrolled in this school at the time National Assessment was conducted?
No
Yes
STOP
Did this student attend more than one day of school during the 30-day period preceding National Assessment testing?
Yes
No
STOP
Is this student temporarily away from school (i.e., suspension, illness, injury, travel, etc.) but expected to return?
Yes
No
I don't know
STOP
STOP
STOP

C-1

Comments _____

_____

_____

_____

Form completed by _____ Title _____ Date _____

Sign first form completed with name, title, and date. DO NOT sign additional forms unless several people are completing forms.





NIE Form No. 7931.48